VANUATU NATIONAL STATISTICS OFFICE
BUREAU NATIONAL DES STATISTIQUES

2009 National Population and Housing Census

Analytical Report
Volume 2

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Long God yumi stanap

Contents

PREFACE

The report contains the demographic analysis of data from the 2009 Census of Vanuatu as well as for each of its six (6) provinces, the rural and urban areas. It is the second volume (Volume 2) of reports released based on the census data collected. The report is aimed to assist planners, policy makers and researchers alike to interpret and understand issues and concepts in relation to the demographic characteristics of the Vanuatu and being able to have evidence-based decision making.

The report has seven (7) chapters, with Chapter 1 introducing the report and Chapter 2 contains the population size, trend, distribution based on previous censuses. Chapter 3 discusses the estimates of demographic components namely fertility, mortality and migration. Chapter 4 looks at the social characteristics of the population in regards to health, education and labor market while chapter 5 discusses the household characteristics. Chapter 6 contains the national and sub national population projections while the last chapter contains the implications of the demographic trends, addressing the population dynamics and the cross-cutting issues.

In all the analytical chapters stated above, comparisons with the results from previous censuses have been made whenever this was feasible. It should however be noted that these comparisons are often far from easy and straight forward due to changes in census strategy, definitions etc. Otherwise, much of the analysis contained in this report mainly concentrates on the current census data

I would like to thank all persons who have made a contribution in one way or another, towards the entire operation of the 2009 census. It is a collective effort of the people of Vanuatu and its donor partners. I also take this opportunity to thank the National Statistical Office staffs who have been working around the clock to ensure that the report is delivered in a timely manner. I am especially grateful for the enormous amount of work done, from census design, collection, processing, tabulation, analysis and reporting by Census team led by Mr Benuel Lenge, the Census Administrator and Mr Rara Soro as the Census data processing manager. The write up of this Volume 2 is contributed to by Mr Andy Calo and Mr. Roger Smithy who have both been working tirelessly with the in-house technical support from the Secretariat of the Pacific Community (SPC).

The technical support of SPC throughout the entire census project has been invaluable and is fully acknowledged in this regard. I acknowledge Dr. Gerald Haberkorn, the Programme Manager for SPC Statistics for Demography Programme, for the overall SPC technical assistance support and assistance with the production of this Volume 2. Mr Andreas Demmke, the SPC Population Specialist - Demographic Analysis for the write up of Volume 2, Ms Leilua Taulealo, SPC Population Data Officer and Arthur Jorari, the SPC Demographer. I extend my gratitude towards Michael J. Levin, Senior Census Trainer at the Harvard Centre for Population and Development Studies, for his work on fertility estimates using the *Own Child Method*.

I hope you will find this report useful for your perusal.

Simil Johnson
Government Statistician
Vanuatu National Statistics Office

FOREWORD

I am privileged to have this opportunity in launching the 'Vanuatu 2009 census of population and housing, Volume 2: Analytical report'. The report is based on Vanuatu's 2009 population census data and was prepared by SPC's Statistics and Demography Programme in close collaboration with the Vanuatu National Statistics Office.

This report is part of the dissemination of results from the 2009 census. An important aspect of data dissemination is therefore to provide technical information in formats that can be understood and applied by technical and non-technical users, to ensure that planners and policy-makers can take key features of their national socioeconomic and demographic situation into account.

The report contains an analysis of Vanuatu's recent population growth and dynamics, in particular the level, trends and patterns of fertility, mortality, and migration. The likely impacts of some of these dynamics on wider cross-cutting issues, such as the environment, health, education and economic activity, are discussed. The report also presents a set of population projections to provide planners and policy-makers with scenarios of the size and structure of Vanuatu's future population with the aim of assisting decision makers to effectively plan for the needs of different population groups at different points in time.

Evidence-based decision-making and effective planning are essential to good governance. The information provided in this report are of importance to the national Priority Action Agenda (PAA) and our international obligations such as that of the millennium Development Goals (MDGs), where they can be measured and be monitored on their progress.

The government of Vanuatu has always been supportive when it comes to data collection for its vital services. It is important to note that apart from Education and Health services, Information is also another form of service provided by the government. Without information, it is impossible to make proper planning sound decision making. The government's commitment was shown in previous censuses, such as in the 1999 census when it funded the entire census and again in 2009 when the government contributed about 75% of the Census budget. However, all these could not have been successful without the continuous support of our donor partners - Ausaid, NZAid, UNFPA and SPC.

The information presented here is the result of intensive effort and collaboration between many people at all levels of the Government of Vanuatu and SPC. The technical support from SPC enabled the transfer of skills to the Vanuatu National Statistics Office (VNSO). I acknowledge their valuable work and trust the results will be immensely useful in planning for Vanuatu's future development.

Honorable Moana Carcasses Calosil
Minister of Finance and Economic Management
Republic of Vanuatu
May, 2011

REPUBLIC OF VANUATU
MINISTER OF FINANCE AND ECONOMIC MANAGEMENT
RÉPUBLIQUE DE VANUATU

SUMMARY OF MAIN INDICATORS

Indicator	Vanuatu	Urban	Rural	Torba	Sanma	Penama	Malampa	Shefa	Tafea
Total population	234,023	57,195	176,828	9,359	45,855	30,819	36,727	78,723	32,540
Males	119,091	29,618	89,473	4,727	23,623	15,543	18,446	40,550	16,202
Females	114,932	27,577	87,355	4,632	22,232	15,276	18,281	38,173	16,338
Average annual population growth	2.3	3.5	1.9	1.9	2.4	1.5	1.2	3.7	1.1
people/km^2)	19			11	11	26	13	52	20
Urbanization									
Urban population	57,195	-	-	-	13,156	-	-	44,039	-
Per cent urban (%)	24.4	-	-	-	28.7	-	-	55.9	-
Urban growth rate (%)	3.5	-	-	-	2.0	-	-	4.1	-
Households									
Number of private households	47,373	11,606	35,767	1,766	9,213	6,620	7,991	15,930	5,853
Average household size (number of people per household)	4.8	4.8	4.8	5.2	4.8	4.5	4.5	4.8	5.5
Number of institutions	209	73	136	11	66	26	23	76	7
Population structure									
Number of children (<15 years)	90,973	18,065	72,908	3,987	18,376	12,739	14,675	26,092	15,104
Youth population (15-24 years)	45,423	13,646	31,777	1,728	9,058	5,339	6,210	17,734	5,354
Population aged 25-59 years	83,821	23,380	60,441	3,063	16,071	10,377	12,958	31,082	10,270
Older population (60 years and	13,806	2,104	11,702	581	2,350	2,364	2,884	3,815	1,812
Median age	20.5	22.8	19.5	18.7	19.6	19.3	20.4	22.6	17.1
Dependency ratio (15-59)	81	54	92	95	82	96	92	61	108
Sex ratio	104	107	102	102	106	102	101	106	99
Mean age at first marriage (SMAM)	23.9	24.8	23.6	24.0	23.5	23.7	24.4	24.4	22.9
Males	25.5	26.4	25.0	25.5	25.1	25.6	25.9	25.9	23.9
Females	22.5	23.0	22.2	22.7	22.1	21.9	23.1	22.8	22.1
Labour force									
Employed population (number)	42,295	18,016	24,279	716	7,596	4,887	4,710	22,091	2,295
Males	25,916	10,883	15,033	498	4,833	2,913	2,920	13,302	1,450
Females	16,379	7,133	9,246	218	2,763	1,974	1,790	8,789	845
Subsistence workers (number)	41,877	1,996	39,881	2,977	9,788	6,695	8,274	6,090	8,053
Males	21,942	1,131	20,811	1,479	4,979	3,361	4,321	3,569	4,233
Females	19,935	865	19,070	1,498	4,809	3,334	3,953	2,521	3,820
Unemployed (number)	4,518	2,798	1,720	7	791	67	312	2,516	825
Males	2,301	1,363	938	6	415	35	154	1,246	445
Females	2,217	1,435	782	1	376	32	158	1,270	380
Labour force participation rate	70.9	61.5	74.4	77.1	73.0	79.6	75.6	63.7	72.3
Males	80.4	70.4	84.3	86.2	81.3	86.3	87.2	73.5	84.1
Females	61.4	52.3	64.8	68.4	64.5	73.0	64.7	53.5	61.6
Employment–population ratio	30.3	47.1	24.0	13.7	28.5	28.0	21.8	43.0	13.2
Males	37.2	55.5	30.1	19.5	35.8	33.7	27.9	50.7	17.7
Females	23.4	38.2	18.0	8.1	21.1	22.4	16.0	34.9	9.3
Unemployment rate (%)	4.6	11.9	2.3	0.2	4.1	0.5	1.9	7.7	6.6
Males	4.1	9.9	2.2	0.3	3.8	0.5	1.7	6.5	6.4
Females	5.2	14.7	2.4	0.1	4.4	0.5	2.2	9.4	6.8

SUMMARY OF MAIN INDICATORS (continued)

Indicator	Vanuatu	Urban	Rural	Torba	Sanma	Penama	Malampa	Shefa	Tafea
Education									
School enrolment rates of 6–13 year-olds (%)	85.9	90.8	84.8	84.5	86.5	86.8	91.0	88.5	75.8
Males	85.7	90.8	84.6	82.9	86.5	86.4	90.9	88.3	75.5
Females	86.2	90.7	85.2	86.4	86.6	87.1	91.2	88.7	76.1
Proportion (%) of population aged 15 and older with:									
No education (never been to	16	5	20	25	16	19	13	8	39
Males	14	4	18	21	15	16	12	7	35
Females	18	5	22	29	17	21	14	9	42
Primary education	48	36	53	57	50	53	62	43	38
Males	48	35	53	59	51	53	61	42	40
Females	48	38	52	56	50	52	62	44	35
Secondary education	25	43	18	12	24	21	18	35	14
Males	26	44	19	12	24	22	19	35	15
Females	24	43	17	12	23	20	16	34	13
Tertiary education	4	7	2	1	3	2	2	6	2
Males	4	8	3	1	3	3	2	7	2
Females	3	6	2	1	2	2	2	5	1
Vocational/professional	1	2	1	0	1	1	1	2	1
Males	1	2	1	1	1	1	1	2	1
Females	1	2	1	0	1	0	0	1	1
Literacy rate (15+)	84.8	97.7	80.5	75.1	84.6	81.8	86.0	95.0	63.9
Males	85.7	97.8	81.6	76.5	85.1	83.6	86.3	95.2	66.3
Females	83.9	97.6	79.4	73.8	84.0	80.1	85.7	94.8	61.6
Literacy rate (15-24)	92.1	99.2	89.0	82.5	93.0	88.8	94.3	97.8	76.0
Males	91.6	99.1	88.2	79.7	91.9	87.5	93.0	97.4	77.1
Females	92.7	99.3	89.7	85.2	94.0	90.2	95.6	98.3	75.1
Language ability (as % of population 5 years and older)									
English	64	82	58	56	63	61	57	79	42
French	37	50	32	20	37	33	38	42	30
Bislama	74	89	68	65	73	69	75	86	48
Other (local) language	50	65	45	32	44	64	33	64	37
Internet use (as % of population 15 years and older)									
Total	6.7	16.3	3.0	0.7	3.5	3.2	1.8	13.6	2.3
Males	7.3	17.2	3.4	0.5	3.8	3.6	2.0	14.4	2.9
Females	6.0	15.3	2.7	0.8	3.1	2.9	1.5	12.7	1.8
Disability (number of people)									
Blindness	397	61	336	16	91	60	77	106	47
Males	207	33	174	5	47	37	40	50	28
Females	190	28	162	11	44	23	37	56	19
Deafness	504	62	442	24	94	79	91	127	89
Males	284	33	251	9	52	48	59	65	51
Females	220	29	191	15	42	31	32	62	38
Lameness	1,010	219	791	25	102	149	180	357	197
Males	479	93	386	10	53	67	91	156	102
Females	531	126	405	15	49	82	89	201	95
Senile and/or amnesic	810	146	664	13	85	88	205	241	178
Males	408	75	333	4	46	44	106	111	97
Females	402	71	331	9	39	44	99	130	81

SUMMARY OF MAIN INDICATORS (continued)

Indicator	Vanuatu	Urban	Rural	Torba	Sanma	Penama	Malampa	Shefa	Tafea
Fertility									
Total Fertility Rate (TFR)	4.1	3.2	4.4	4.5	4.2	4.7	4.2	3.4	5.2
Teenage Fertility Rate (ASFR, 15-19)	66	40	77	116	78	68	74	50	67
Average number of children ever born to women aged 45-49	4.4	3.5	4.7	5.1	4.9	4.8	4.6	3.6	5.2
General Fertility Rate (GFR)	126	101	136	143	130	141	126	106	160
Child-Woman Ratio (CWR)	574	438	628	637	589	661	592	467	740
Mean age at childbearing of mothers (in years)	29.3	29.7	29.2	28.4	29.3	29.2	29.0	29.2	30.2
Mean age at childbearing of fathers (in years)	32.3	33.1	31.9	31.2	32.4	32.9	31.8	32.3	31.9
Annual number of births, 2009	7,335	1,670	5,666	313	1,472	977	1,096	2,298	1,179
Crude Birth Rate (CBR)	31.3	29.2	32.0	33.4	32.1	31.7	29.8	29.2	36.2
Mortality									
Proportion of children ever born still alive (%)	96.6	97.8	96.3	95.9	96.4	96.4	96.4	97.4	96.1
Males	96.4	97.6	96.1	95.8	96.2	96.1	96.3	97.2	96.0
Females	96.8	98.0	96.5	96.0	96.6	96.6	96.4	97.7	96.2
Proportion of population 60 years and older widowed (%)	18.1	9.7	19.6	27.9	13.7	24.4	18.5	14.6	19.4
Males	9.6	5.4	10.4	15.3	8.2	11.9	9.7	8.1	9.7
Females	27.4	15.4	29.3	42.0	21.1	37.1	27.7	21.7	28.4
Proportion of population orphaned									
Fathers dead	25.0	23.8	25.4	24.1	23.2	28.0	27.1	24.9	22.9
Mothers dead	19.3	17.7	19.9	19.0	18.6	21.0	21.5	18.9	17.5
Infant mortality rate (IMR)	21	18	22	17	22	27	20	17	30
Males	22	19	23	15	24	24	24	22	24
Females	19	17	21	19	20	29	16	12	36
Child mortality	4	3	4	3	4	6	4	3	8
Males	4	3	4	2	5	5	5	4	5
Females	3	2	4	3	3	7	2	1	10
Under-five mortality	24	20	26	19	26	32	23	19	37
Males	26	22	27	17	29	29	29	26	29
Females	22	19	25	22	23	36	18	13	46
Life expectancy at age 20 (e20)	53.4	54.6	52.8	51.4	53.5	52.0	53.1	53.8	53.8
Males	52.1	54.1	51.1	49.5	52.5	49.3	51.9	52.8	51.8
Females	54.7	55.2	54.5	53.3	54.5	54.7	54.3	54.7	55.8
Life expectancy at birth (e0)	71.1	72.7	70.3	69.2	71.1	68.9	70.9	71.8	70.6
Males	69.6	72.1	68.4	67.2	69.8	66.2	69.2	70.4	69.1
Females	72.7	73.5	72.3	71.2	72.4	71.7	72.6	73.4	72.1
Estimated annual number of deaths,	1,260	196	1,064	58	211	239	251	338	163
Crude death rate (CDR)	5.4	3.4	6.0	6.2	4.6	7.8	6.8	4.3	5.0
Migration									
Annual net migrants	0	-	-	-60	0	-260	-400	1,370	-650
Annual net migration rate	0.0	-	-	-0.6	0.0	-0.8	-1.0	1.6	-1.9

EXECUTIVE SUMMARY

The aim of this report is to provide an analysis of the 2009 Vanuatu population census data with a strong emphasis on demographic trends, patterns and levels.

The 2009 census determined that the total population was **234,023**. This compares with 186,678 people in 1999, and represents an increase of 25.4% or 47,345 people. This population increase represents an **average annual growth rate of 2.3%**, or an increase of 4,733 people per year.

The 2009 census enumerated 119,091 males and 114,932 females, representing a **sex ratio of 104 males per 100 females**.

The **urban** population was **57,195** people (**24.4%** of the total population), and includes the towns of Luganville in Sanma with 13,156 people, and Port Vila in the Shefa province with 44,039 people.

The average **population density for Vanuatu was 19 people/km²**. This varies widely between provinces. For example, Shefa had 52 people/km², while Torba and Sanma had only 11people/km².

The census counted **47,373 private households** with 228,883 household members, which represents **4.8 people per household** on average. More than 10% (25,451) of all people that live in private households live in households with 10 or more people.

The 2009 census data show a **net flow of people towards Shefa province** from all other provinces during the 5-year period 2004–2009. However, the provinces Penama and Malampa lost the most people due to internal migration.

Vanuatu has a young population with a **median age of 20.5** years. More than one-third (39%) of the population was younger than 15 years of age, and only 6% were 60 years and older.

The **age dependency ratio** was calculated using the 15–59 year-old age group as the "working age population". For every 100 people of working age, **81** were in the **age dependent** category.

The **number of births** was estimated at **7,335** in 2009. This accounts for a **crude birth rate (CBR)** of **31.3** per 1000.

The total fertility rate (TFR) — the average number of births per woman — declined from about 4.6 in 1999 to about **4.1 in 2009.**

Based on census data for the number of children ever born and still alive, the **infant mortality rate (IMR)** was estimated at **21**; 22 for males and 19 for females. This estimate is lower than the

1999 levels when the IMR was 27 and 26 for males and females – and is thus an improvement in infant mortality rates.

Based on the 2009 census data, **life expectancies at birth** were estimated to be **69.6** and **72.7** years for males and females**,** respectively, representing an increase compared to 1999 when it was 65.6 and 69.0 years for males and females.

Based on the derived life tables, a **crude death rate** (**CDR**) of **5.4** per 1,000 was calculated, which were approximately 1,260 deaths in 2009.

The estimated mortality indicators show more positive mortality indicators for females than for males, with females expected to live, on average, about three years longer than males.

Internal migration during the five year period 2004-2009 was primarily directed towards Shefa province and specifically to the capital Port Vila. The largest numbers of migrants came from Tafea, Malampa and Penama.

Net international migration is estimated to be negligible during the intercensal period 1999–2009.

Women marry at a younger age than men. The average **age at marriage was 25.5 and 22.5 years for males and females,** respectively.

The **Presbyterian religion** is with 28% of the total population, the most dominant in Vanuatu. The Anglican is the second largest, with 15%, followed by Seventh Day Adventist (SDA) and the Roman Catholic Church, each representing 12% of the Vanuatu population.

The 2009 census questionnaire included a question on **smoking and drinking habits** of the population aged 15 and older**.** It was found that **25% of the population smoked cigarettes;** 45% of males and 4% of females. The age group that most likely smokes is 20–39 year-olds. In general, more than half of all males aged 20–39 smoke, while only about 5% of females.

Furthermore, it was found that **10% of the population drinks alcohol;** 17% of males and 3% are females. The age group that most likely consumed alcohols is 20–34 year-olds. In general, about one quarter of all males aged 20–34 drink alcohol, while less than 5% of females.

The proportion of the population consuming kava is much larger than that smoking or drinking alcohol. **Almost one third of the population consumed kava;** 53% of males and 8% of females. The age group that most likely consumed kava is 25–49 year-olds. In general, about two thirds of all males aged 25–49 drink kava, compared to about 10% of females.

Data on **disabilities** indicate that about **12% of the total population** reported a **disability**. The proportion of the population with a disability increases with age, and there is very little difference in the proportion of males and females with a disability. While about 6% of children younger than 5 years of age had a disability, it was more than half of the population at age 60 years and older. Of those who reported disabilities, about 1,000 people could not walk at all, 800 people reportedly could not remember or concentrate, another 500 were deaf, and 400 people were blind.

School enrolment data show that **86%** of children in the age group 6–13 years (compulsory school age) were enrolled in schools with female school enrollment rates slightly higher than male enrollment rates. However, school enrollment rates declined rapidly after the age of 13, and about 25% of 14 year-olds were not attending school. After the age of 16, male school enrollment rates were higher than female enrollment rates. In general, enrollment rates were significantly higher in the urban than the rural areas.

Data on **educational level completed** indicate that in 2009, about half of the population 15 years and older had only a primary level education. About one quarter had a secondary level education, and almost 4% of the population aged 15 and older had a tertiary level education. **Sixteen per cent had never been to school or only attended preschool**. Educational levels were significantly higher of the population in the urban area than in rural areas, and educational levels of males were higher than females.

Almost everyone (98%) older than 5 years of age living in the urban areas was literate. This compares to only 80% of the population 5 years and older in rural areas. Literacy rates were slightly higher for males than females. **Literacy** in Bislama was, with 74% of the population, the highest followed by English (64%), and French (37%). Half of the population is literate in a language other than Bislama, English or French. Literacy was measured by a respondent's ability to read and write a simple sentence in any language.

Literacy rates were over 90% for the population aged 10-34, then it gradually declines after that, and is less than 70% of the population at age 65 years and older.

The **literacy rate** of 15–25 year-olds was **92%** and **93%** for males and females, respectively.

The **main language spoken** in private households was a local language (63%), 34% speak Bislama, 2% English, and 1% French.

The **internet** was used by 7% of the population aged 15 years and older; this was 16% in the urban areas and only 3% in the rural areas.

Although a high percentage (71%) of Vanuatu's population aged 15 and older was **economically active**, only a relatively small proportion (30%) received a regular **paid income**; this group consisted of 37% males and 23% females.

Subsistence work — such as growing or gathering produce or fishing to feed families — was the **main activity of 32% of Vanuatu's males and 28% females** aged 15 and older. About 39% of the population in rural areas was subsistence workers compared with 5% in the urban centre.

Only about 4,500 people were categorised as being unemployed, resulting in an **unemployment rate of 4.6%**; 4.1% for males and 5.2% for females. The unemployment rates are 12% and 2% in the urban and rural areas respectively.

Fifty one people did not work because of poor weather conditions, or because they could not afford the transportation costs to work. In addition, 897 people did not work and did not look for work, because they believed that no work was available. Using the international definition of unemployment, these people were not classified as unemployed because they did not look for work and did not indicate that they were available for work. However, if all of these people were included in the unemployed category, the unemployment rate would increase to **5.5%.**

If subsistence workers were included as part of the unemployed — on the grounds that these people would look for work if they believed cash work was available in their labour market community — the total unemployment level would increase to 46,395 people, or an **unemployment rate** of **47%** (43% for males and 51% for females, and 20% for the urban area and 55% in rural areas). While this assumption would not apply to all individuals in this group, it would likely apply to a proportion of them. Depending on the assumptions a user of these data may wish to use, the resulting unemployment rate would fall somewhere between 4.6% and 47%.

The **main source of household income** was, with 46% of all households, the sale of fish, crops, or handicrafts. However, this was 60% of all rural households compared to only 3% of urban households, where 81% of all households' main income was wages and/or salary. Only 18% of rural household's main source of income came from wages and/or salary.

Only 11% of urban household were involved in **marine fishing activities**; this was 39% of rural households. **Freshwater fishing activities** were carried out by 4% and 21% of urban and rural households respectively.

While 81% of all rural households were involved **in growing cash crops**, only 17% of urban households grow cash crops.

Compared to rural households, where 80% of households raised chickens, 57% raised pigs and 39% cattle, only a small proportion of urban households raised any **livestock**.

Regarding the availability of **household items,** a higher proportion of households in urban areas (compared to rural households) used items such as motor vehicles, gas stoves, fridge or freezer, TV, radio, and computers, as well as DVD decks. However, there are some items more commonly used in rural than in urban areas such as canoes and generators.

While 91% of urban households had at least one **mobile phone** compared to 71% in rural areas, there were 9% of urban households and 2% of rural households that had an **internet connection**.

Information on **tenure** reveals that **81%** of all households **owned their dwelling** outright, while 12% rented their dwelling, and another 6% resided in their dwelling rent-free. More than 90% of households in the rural areas owned their dwelling, while 39% of urban households rented their dwelling.

Forty-six per cent of all households obtained their **drinking water** as piped water. The second most important source was a tank (34%). However, private piped water was only used by a significant proportion of households in the urban areas. Otherwise, 14% of all rural households obtained their water from a river, lake or spring.

The most frequently recorded **toilet facility** used by **47%** of all private households was a **pit latrine**, while 21% of all households used a flush toilet; this percentage was 65% in the urban areas and only 6% in the rural areas.

The main source of **lighting** in Vanuatu was a **kerosene lamp,** used by an average of **48%** of all households, although this percentage was only 6% in the urban areas, compared to 62% in the rural areas. Eighty per cent of urban households were connected to the electricity main grid. This was only 11% of the rural households.

The main energy source for **cooking** for 85% of all households was **wood and/or coconut shells.** It was almost universally used by the rural households and by slight more than half of the urban households, where 40% use gas as the main energy source for cooking.

About **52% of all households dispose of their waste** by burning it. In the urban areas two in three households dispose their waste using the authorized waste collection.

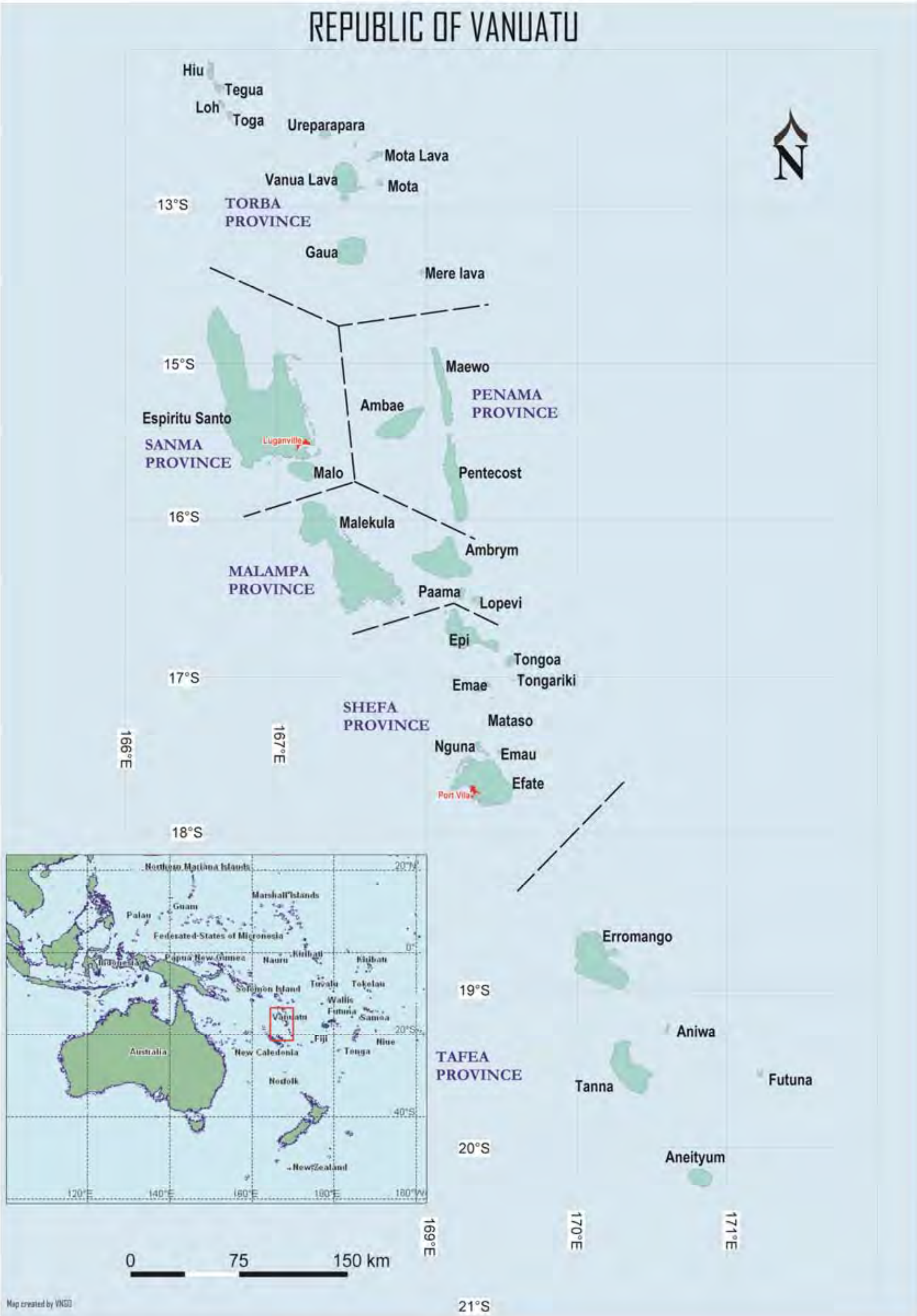
With respect to the use of insecticide treated **bednets**, 76% of all households had at least one bednet available; this was 88% of rural households compared to only 38% of urban households.

According to **population projections** prepared for this report, Vanuatu's population in 2030 will increase to about 370 thousand people, and to 483 thousand in 2050. The population will age, with a decreasing proportion of young people aged 15 and younger, and an increase in people aged 60 and older. The working age population (aged 15–59) will be almost twice as high in 2030 compared to 2009, and will comprise of about 300 thousand people in 2050. The school age population aged 6-13 years will increase from its current level of 40 thousand to 60 thousand.

Analysis of census data provides timely and accurate information about demographic trends, patterns and levels. Through census data analysis, governments acquire comprehensive and consistent information about their country's population structure, population processes and socio-economic characteristics. The population data provided in this report can be an effective tool for planning and policy-making. As policies are aimed at achieving goals in the future, knowledge about future population trends is required.

Understanding and anticipating population changes enables development planners to formulate effective programmes in areas as diverse as health, education, environment, poverty reduction, social progress, and economic growth.

MAP OF VANUATU



1. INTRODUCTION

This report provides an analysis of the Vanuatu 2009 census data and, where data are available, presents comparisons with census data from earlier censuses.

1.1 Geographic setting

Vanuatu consists of six provinces: Torba, Sanma, Penama, Malampa, Shefa, and Tafea, spread over an area of 612,300 km² in the South Pacific with a total land area of 12,281 km², stretching from Hiu Island up north to Mathew and Hunter Islands down south. It includes 83 main islands, of which, about 63 are permanently inhabited. Port Vila, the capital, is located on the island of Efate (province of Shefa) which is the most populous island although Santo Island is the biggest island in terms of land area, and is located in Sanma province. Port Vila is 1,288 km due south east of Honiara, Solomon Islands; 1,071 km west of Suva, Fiji; and 2,394 km east of Cairns, Australia (see map).

1.2 Background to report

This report is a collaborative effort between the Vanuatu National Statistics Office (VNSO) and the Statistics for Development Programme of the Secretariat of the Pacific Community (SPC). For this purpose, Mr. Andreas Demmke visited the VNSO in Port Vila from 7 March 2011–15 April 2011. Mr Simil Johnson, Vanuatu's Government Statistician, reviewed and commented on the final draft of this report.

The report is based on data collected during the population census enumeration, with 16 November 2009 being census day. The detailed tabulations of the 2009 census report are published in '2009 National Population and Housing Census, Basic Tables Report, Volume 1, Vanuatu National Statistics Office, Port Vila, Vanuatu (2011). The main purpose of this report is to:

- provide a general overview of the vast amount of detailed information that is available from the 2009 census enumerations;
- generate interest, curiosity, and a desire for more detailed information, especially for Vanuatu decision-makers and the general public; and
- enhance the decision-making process by policy-makers.

Data users are encouraged to contact either the VNSO or SPC for further information.

Vanuatu National Statistics Office Private Mail Bag 9019 Port Vila Vanuatu Telephone: +678 22110 or 22111 E:mail: stats@vanuatu.gov.vu http://www.vnso.gov.vu	Statistics for Development Programme Secretariat of the Pacific Community (SPC) BP D5, 98848 Noumea Cedex New Caledonia Telephone: +687 26 20 00 Email: Stats&Demog@spc.int http://www.spc.int/sdp/

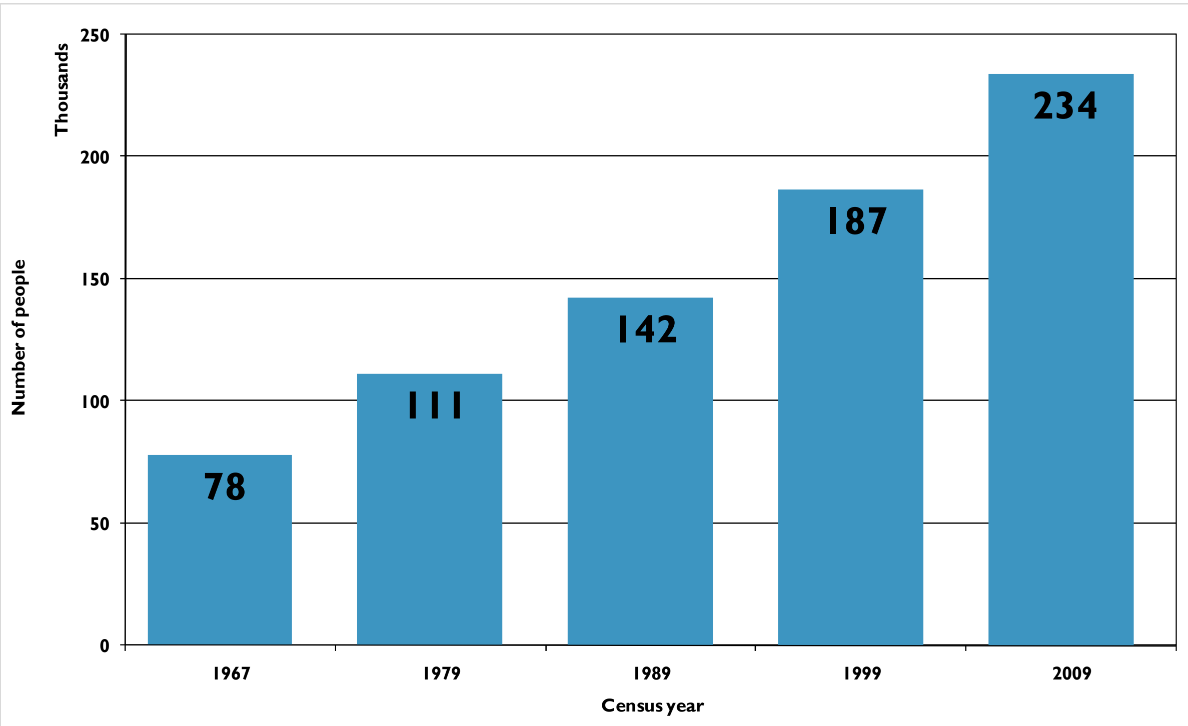
2. POPULATION SIZE, TREND, DISTRIBUTION, STRUCTURE and URBANIZATION

2.1 Population size and trend

The size, growth, and trend of the Vanuatu population are important considerations in the planning process. Urban areas and areas of high population density need to be understood in order to analyze the population data in terms of its demographic dynamics.

The total enumerated population of Vanuatu stood at 234,023 in 2009. This is an increase of 47,345 people since the 1999 population census. Figures 1-3 show the population trend from 1967-2009.

Figure 1: Total population size, Vanuatu: 1967–2009



It can be seen from Figure 1 that the population has continuously increased and tripled in size from 78 thousand in 1967 reaching to 234 thousand people in 2009.

Population change for the urban and rural and the 6 provinces of Vanuatu all show an increase in population size as presented in Figures 2 and 3. In all these areas the population continues to grow although with various growth rates. Shefa and Sanma province, where the urban centers of Port Vila and Luganville are located, had the fastest population increase.

Figure 2: Total Population size by urban rural residence, Vanuatu: 1967–2009

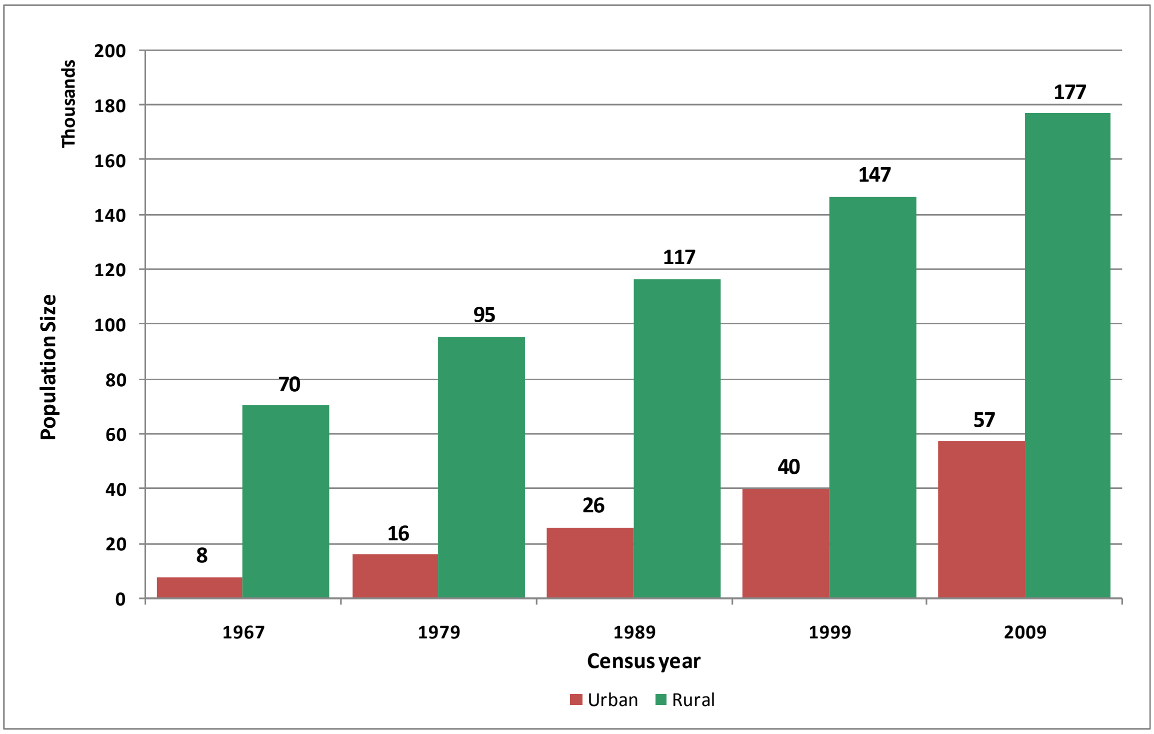
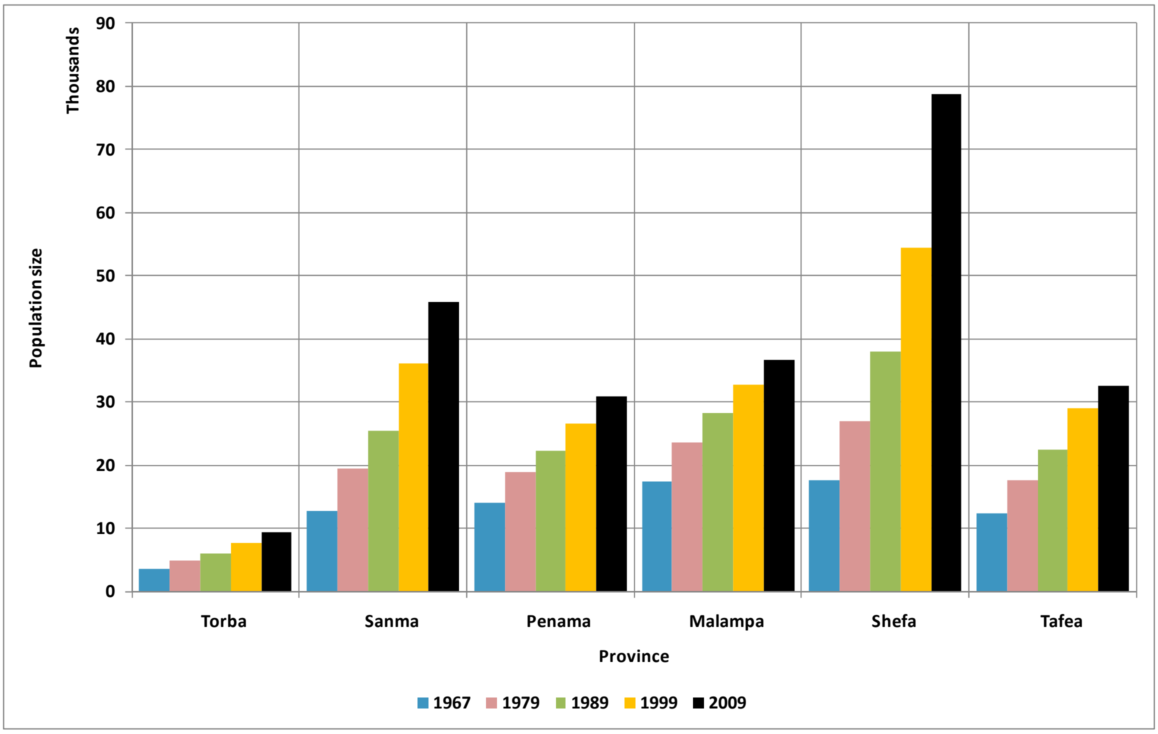


Figure 3: Population size by province, Vanuatu: 1967–2009



The fertility, mortality and migration are the three demographic processes that continuously affect the population composition. A closed population, which is a population not affected by migration, experiences change only in the form of natural increase; only births and deaths, affect the population size. However, population growth is usually also shaped by migration.

Between the inter-censual periods 1989-1999 the population growth rate was 2.6 percent that declined to 2.3 percent for the period 1999-2009 as shown on Table 1.

Despite declining growth rates the population continued to increase faster (Figs.4 and 5). While the average annual population increase during the period 1989-1999 was 4,212 people with a 2.6% growth rate, it increased to 4,729 people annually during the period 1999-2009 despite a lower growth rate of only 2.3%.

There were lower growth rates in all provinces during the period 1999-2009 compared to the period 1989-1999, except for Shefa province which recorded a growth rate of 3.7% in 1999-2009 compared to 3.4% growth during 1989-1999. Shefa province had the highest growth rate of all provinces (Fig.6 and Table 1) – a clear sign of internal migration flows towards Shefa and the capital Port Vila.

With a 2.3% growth rate, the population of Vanuatu would double in 31 years. *Doubling time* is an indication about future population size if assuming that the current population growth rate remains constant over time. In such a case, the population would reach 468 thousand people in the year 2040. In that situation, Tafea and Malampa will have their populations doubling in 60 years. Shefa would have the lowest doubling time of just 19 years caused by its growing urban area of Port Vila.

Table 1: Population size, growth rate and doubling time by place of residence, Vanuatu: 1989, 1999 and 2009

Region	Total population size			Population change						Doubling Time	
				(in numbers)		(in %)		Annual growth rate			
	1989	1999	2009	1989-1999	1999-2009	1989-1999	1999-2009	1989-1999	1999-2009	1999	2009
Vanuatu	**142,419**	**186,678**	**234,023**	**4,212**	**4,729**	**3.0**	**2.5**	**2.6**	**2.3**	**27**	**31**
Urban	25,870	40,094	57,195	1,354	1,708	5.2	4.3	4.2	3.5	17	20
Rural	116,549	146,584	176,828	2,859	3,021	2.5	2.1	2.2	1.9	32	37
Torba	5,985	7,757	9,359	169	160	2.8	2.1	2.5	1.9	28	37
Sanma[1]	25,542	36,084	45,855	1,003	976	3.9	2.7	3.3	2.4	21	29
Penama	22,281	26,646	30,819	415	417	1.9	1.6	1.7	1.5	41	48
Malampa	28,174	32,705	36,727	431	402	1.5	1.2	1.4	1.2	49	60
Shefa[1]	38,023	54,439	78,723	1,562	2,426	4.1	4.5	3.4	3.7	20	19
Tafea	22,414	29,047	32,540	631	349	2.8	1.2	2.5	1.1	28	62

[1]Shefa and Sanma include the urban areas of Port Vila and Luganville

Figure 4: Population change, average annual increase in numbers, Vanuatu: 1967–2009

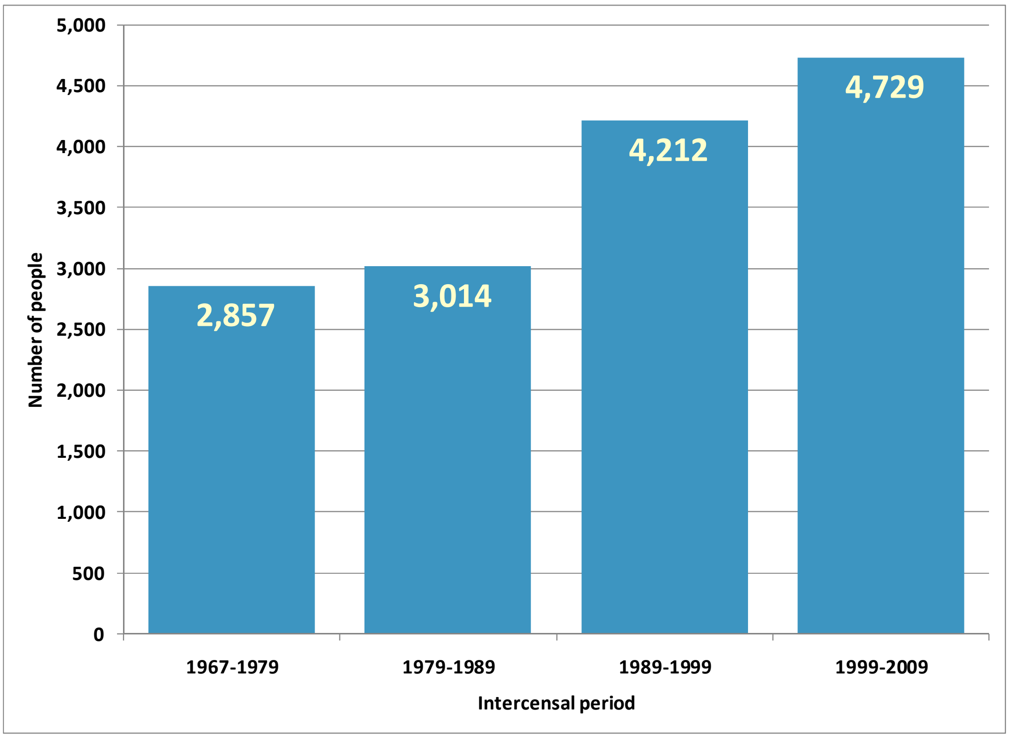


Figure 5: Average annual population growth rate (%), Vanuatu: 1967–2009

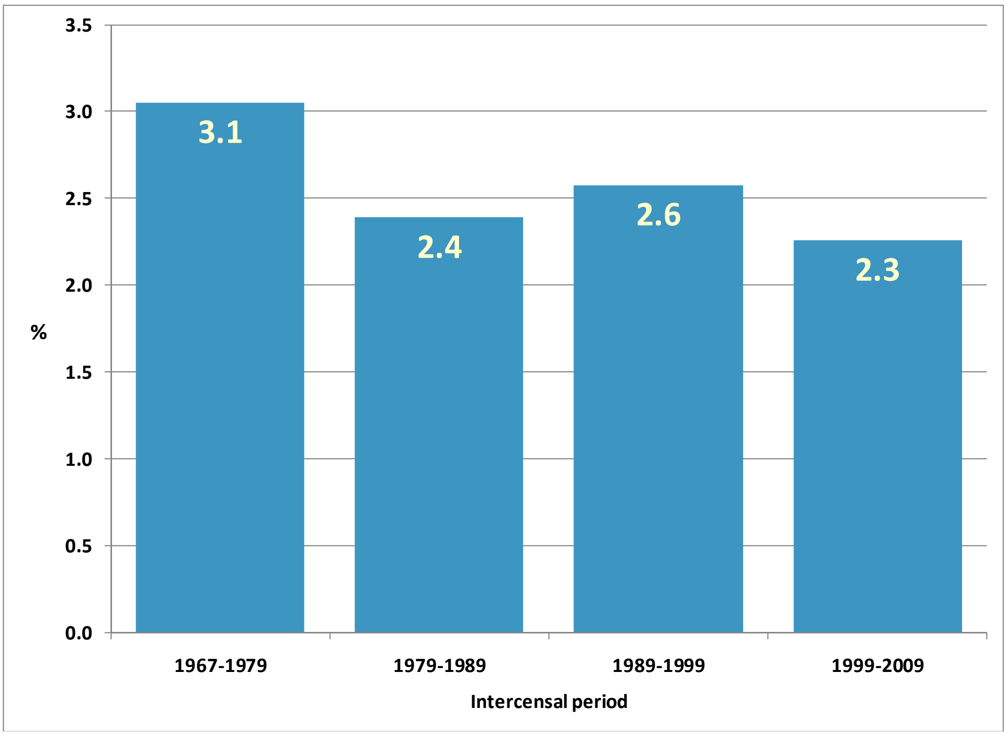
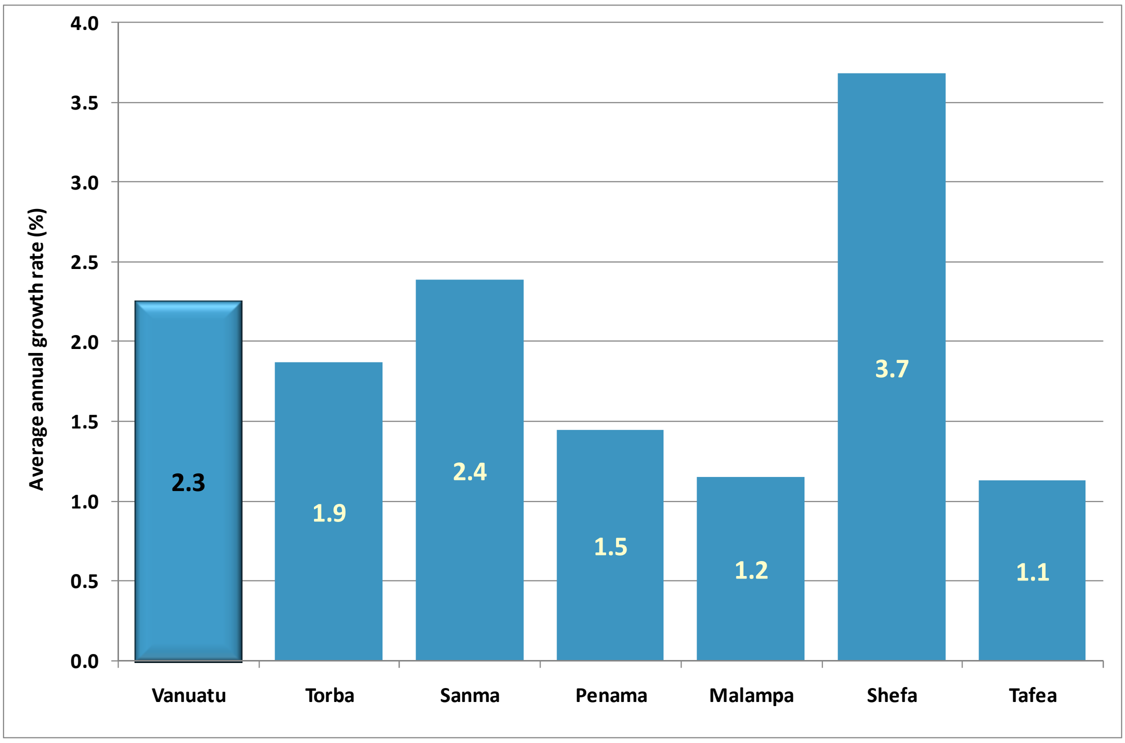


Figure 6: Average annual population growth rate (%) by province, Vanuatu: 2009

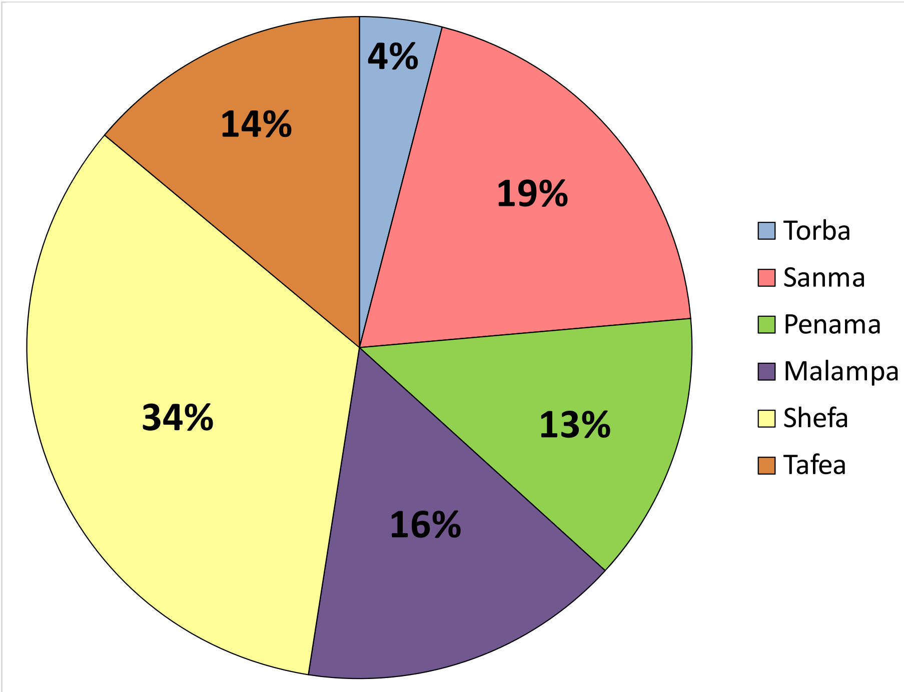


2.2 Population distribution

Information obtained on the place of enumeration was used to describe the distribution of population. Figure 7 displays the proportion of Vanuatu population by province.

In 2009, Shefa province had the biggest share of Vanuatu's population, comprising 34% of the total population. This represents an increase from 1999 when only 29% people had lived there. Hosting the country's capital urban center is the main reason for this bigger population share in Shefa. Sanma province had the second highest proportion of the total population. In Sanma the second largest urban centre of Vanuatu is located (Luganville).

Figure 7: Population distribution by province (%), Vanuatu: 2009



2.3 Population density

Vanuatu has a total land area of 12,281km^2. According to the 2009 census, the average population density for Vanuatu was 19 people/km^2 an increase from 15 people/km^2 in 1999 (Table 2).

Population density varied widely throughout the provinces in Vanuatu. Shefa province is the most densely populated due to *urbanization*. Having just over 50 people/km^2 the density represents an increase from 1999 when it had 36 people per square km. Sanma and Malampa both have low densities despite having high populations because of large land areas.

Table 2: Population density (number of people/km^2) by province, Vanuatu: 1999 and 2009

Province	Land area	Total Population			Population Density		
	(km^2)	1989	1999	2009	1989	1999	2009
Vanuatu	**12,281**	**142,419**	**186,678**	**234,023**	**12**	**15**	**19**
Torba	867	5,985	7,757	9,359	7	9	11
Sanma	4,262	25,542	36,084	45,860	6	8	11
Penama	1,204	22,281	26,646	30,819	19	22	26
Malampa	2,808	28,174	32,705	36,724	10	12	13
Shefa	1,507	38,023	54,439	78,721	25	36	52
Tafea	1,632	22,414	29,047	32,540	14	18	20

Information on the above crude population density has been used to calculate a summary measure - the Gini Concentration (or coefficient) Ratio[1] - which indicates how evenly or unevenly the population is distributed over the entire territory of Vanuatu. If the population were evenly distributed in Vanuatu, a given proportion of the country's area would have the same proportion of its population; that is, 20 percent of Vanuatu's area would have 20 percent of the population. In reality, a country's population is never evenly distributed over the land surface area, hence, the cumulative proportion of land area and population will differ one from the other.

The Gini Coefficient Ratio can be used to analyze the historical population concentration in Vanuatu as a whole or the population concentration in each province. The higher the value of the index, the higher is the concentration of the population within the specified areas of the country. The ratio can range from 0 to 1, or sometimes multiplied by 100 to range between 0 and 100. A low Gini coefficient indicates a more equal distribution, with 0 corresponding to complete equality, while higher Gini coefficients indicate more unequal distribution, with 1 corresponding to complete inequality. This index is affected by the size of the areas used in the calculation (Table 3-4).

Table 3: Rank of Crude Population Densities by province and Gini Concentration ratio at the Vanuatu 1999 Census

Rank	Province	Area ai	Population pi	Density	cumulative		cumulative %		cumulative products		|pi-ai|
		(km²)	2009	(per km²)	Area ai	Pop Pi	Area Ai	Pop Pi	ai(pi+1)	ai+1(pi)	=abs(pi-ai)
	Vanuatu	**12,281**	**186,678**	**15**							
1	Sanma	4,262	36,084	8	4,262	36,084	34.7	19.3	815	807	31,822
2	Torba	867	7,757	9	5,129	43,841	41.8	23.5	1,713	1,518	38,712
3	Malampa	2,808	32,705	12	7,938	76,546	64.6	41.0	3,656	3,195	68,608
4	Tafea	1,632	29,047	18	9,570	105,593	77.9	56.6	5,520	4,962	96,023
5	Penama	1,204	26,646	22	10,774	132,239	87.7	70.8	8,773	7,084	121,465
6	Shefa	1,507	54,439	36	12,281	186,678	100.0	100.0	**20,476**	**17,566**	174,397
								Gini Concentration:	**0.29**		

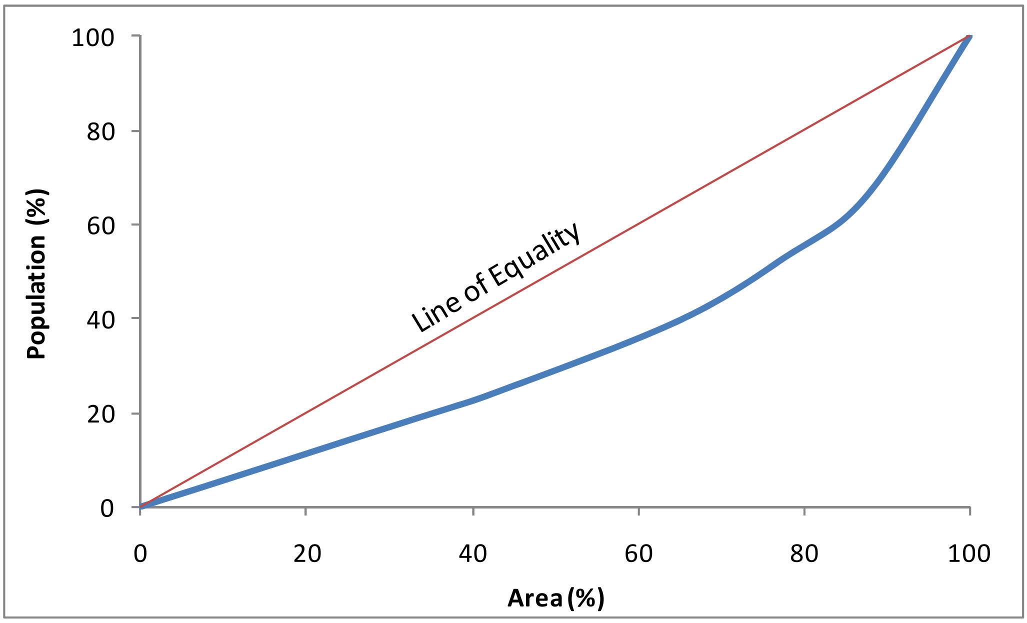
Table 4: Rank of Crude Population Densities by province and Gini Concentration ratio at the Vanuatu 2009 Census

Rank	Province	Area ai	Population pi	Density	cumulative		cumulative %		cumulative products		|pi-ai|
		(km²)	2009	(per km²)	Area ai	Pop Pi	Area Ai	Pop Pi	ai(pi+1)	ai+1(pi)	=abs(pi-ai)
	Vanuatu	**12,281**	**234,023**	**19**							
1	Sanma	4,262	45,855	11	4,262	45,855	34.7	19.6	819	818	41,593
2	Torba	867	9,359	11	5,129	55,214	41.8	23.6	1,641	1,525	50,085
3	Malampa	2,808	36,727	13	7,938	91,941	64.6	39.3	3,438	3,061	84,003
4	Tafea	1,632	32,540	20	9,570	124,481	77.9	53.2	5,171	4,666	114,911
5	Penama	1,204	30,819	26	10,774	155,300	87.7	66.4	8,773	6,636	144,526
6	Shefa	1,507	78,723	52	12,281	234,023	100.0	100.0	**19,841**	**16,707**	221,742
								Gini Concentration:	**0.31**		

[1]From Wikipedia, the free encyclopedia: The Gini coefficient is a measure of statistical dispersion developed by the Italian statistician and sociologist Corrado Gini and published in his 1912 paper "Variability and Mutability". The Gini coefficient is a measure of the inequality of a distribution, a value of 0 expressing total equality and a value of 1 maximal inequality.

Although it is a useful measure for certain purposes, this index of population concentration must be interpreted with caution. If for example, provinces could be defined in such a way that all uninhabited land areas were excluded, then all inhabited land areas would have high population densities, and the index value would be close to its maximum.

Figure 8: Lorenz curve for measuring population concentration in Vanuatu, 2009



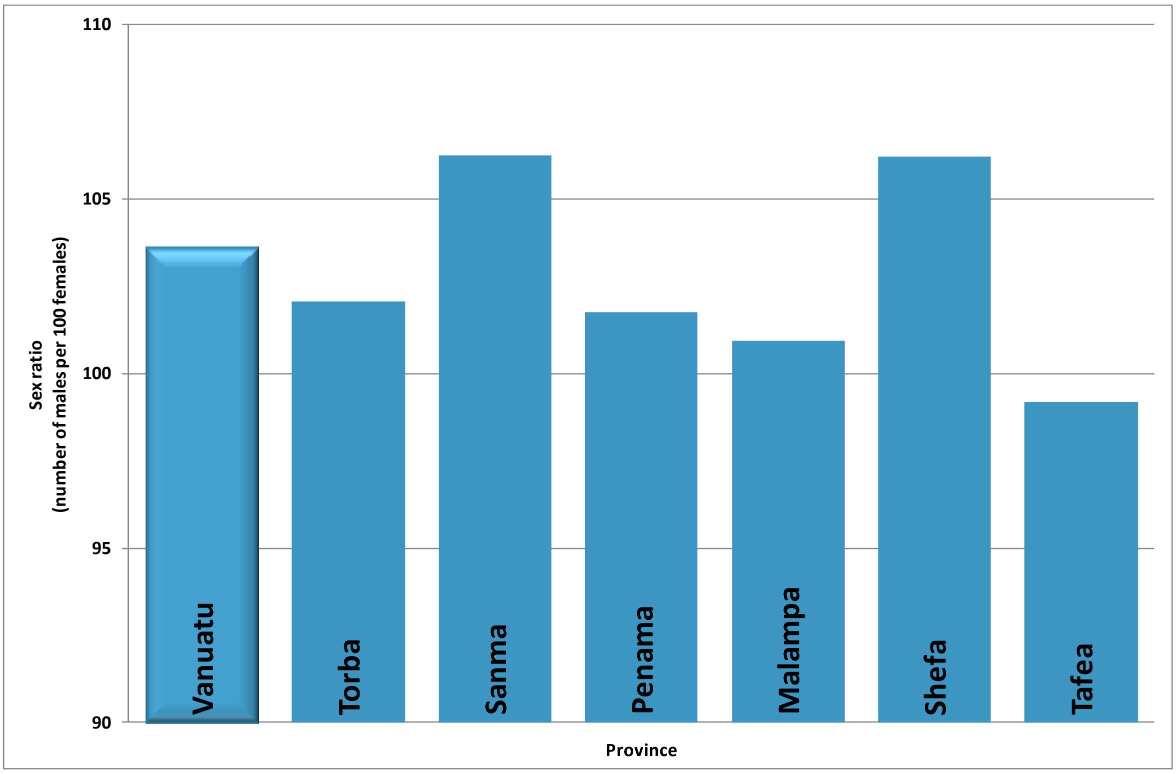
As can be seen by the Lorenz graph there is uneven distribution of land in Vanuatu (Fig.8). With a Gini concentration ratio of 0.31 in 2009, Vanuatu is two thirds away from reaching total equality. This is an increase from the 0.29 Gini concentration ratio in 1999.

2.4 Population structure

The enumerated 2009 resident population consisted of 119,091 males and 114,932 females. Males out-numbered females by 4,157, resulting in a sex ratio of 104, which means that there were 104 males per 100 females. However, sex ratios varied by province as can be seen in Figure 9.

A sex ratio of 100 means that there are equal numbers of males and females while a sex ratio lower than 100 means there are more females than males and a sex ratio higher than 100 meaning more males than females. Figure 9 shows there were significantly more males than females in Vanuatu and in all provinces except Tafea, which had more females than males.

Figure 9: Sex ratios by province, Vanuatu: 2009



A population's age-sex structure may be considered as a map of its demographic history. Persons of the same age constitute a cohort of people who were born during the same year (or period); they have been exposed to similar historical events and conditions. The age-sex structure of the whole population at a given moment may be viewed as an aggregation of cohorts born in different years. A graphic representation of the age structure of the population such as an "age pyramid" shows the different surviving cohorts of people of each sex in Vanuatu.

A population pyramid shows the number of males and females in five-year age groups (Fig.11) or single years (Figs.10, and Figs.12 to 17), starting with the youngest age group at the bottom, and increasing with age towards the top of the pyramid. The number of males is depicted to the left and the number of females to the right of the pyramid's center.

The shaded area in Figure 11 shows the population count of the 1999 census, while the thickly outlined area shows the population count of the 2009 census.

Figure 10: Population pyramid by single years, Vanuatu: 2009

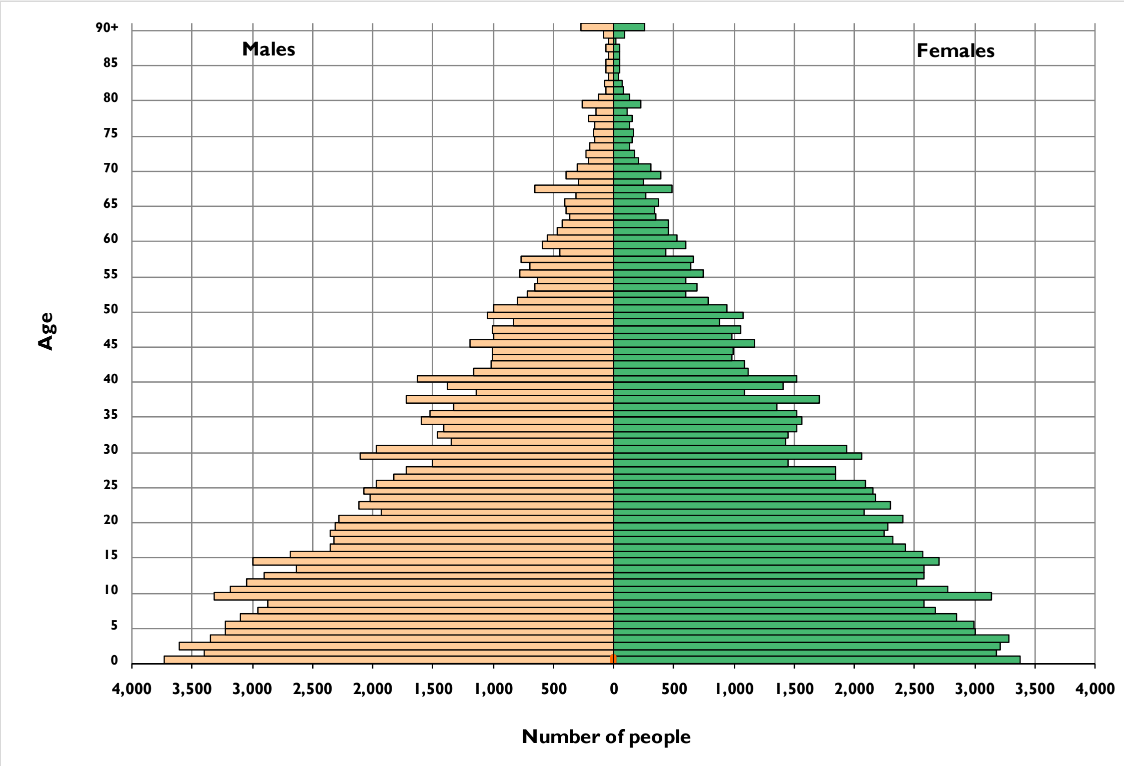
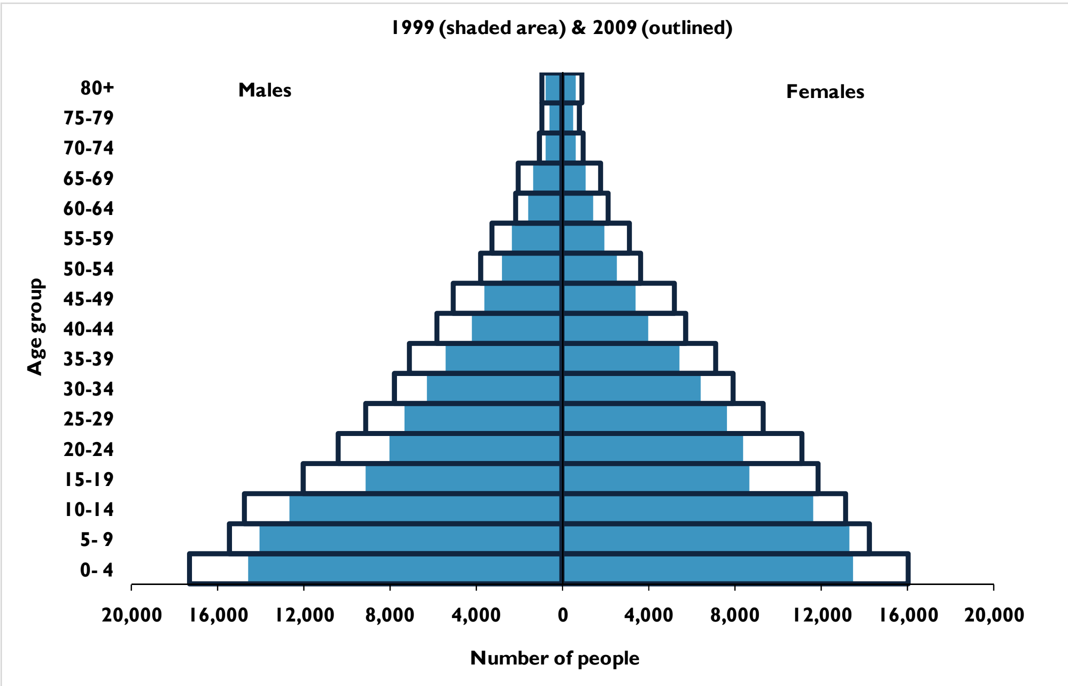


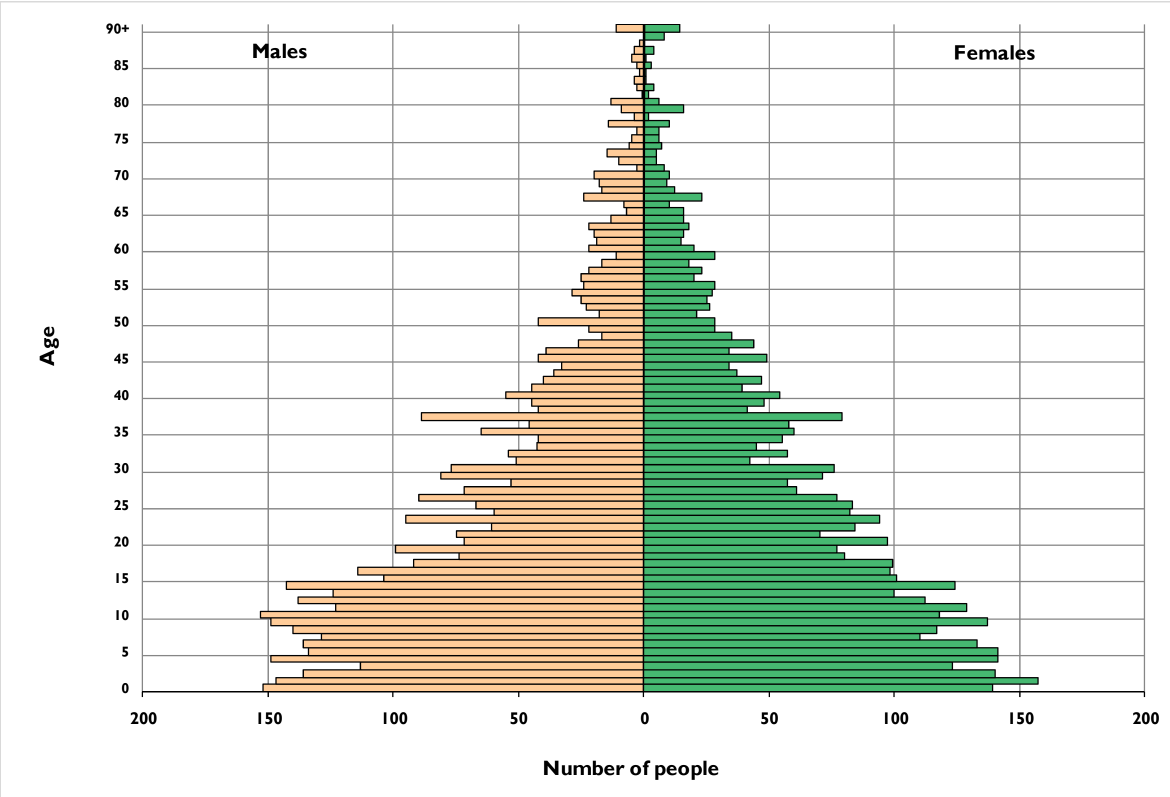
Figure 11: Population pyramid by 5-year age groups, Vanuatu: 1999 and 2009



At first sight, Vanuatu's population pyramid (Fig.11) has the distinct features of a classical pyramid: it has a wide base, meaning that a large percentage of people are in the younger age groups, with increasingly narrow bars towards the top of the pyramid, representing decreasing age groups at older ages[2]. The pyramids of Malampa, Penama, Tafea and Torba have a very similar shape, characterized by the extreme narrow bars at roughly ages 20-34. It is evident that these provinces are losing people aged 20-34 years as they migrate into the urban centers in search for employment, education and for other reasons.

Shefa's population pyramid presents a very different picture compared to the other provinces. It shows a high number of people aged 15-25 years. As stated above, internal migration flows directed particularly into Port Vila town explain the high number of people at that age group. Port Vila, being the gateway to modernization and globalization, presents opportunities that people look for. Opportunities in employment, better services for health and education, and appropriate infrastructure will encourage more people to migrate and use them.

Figure 12: Population pyramid by single years, Torba: 2009



[2] For a discussion on the accuracy of age reporting, and calculation of age accuracy indices, please refer to Appendix 1

Figure 13: Population pyramid by single years, Sanma: 2009

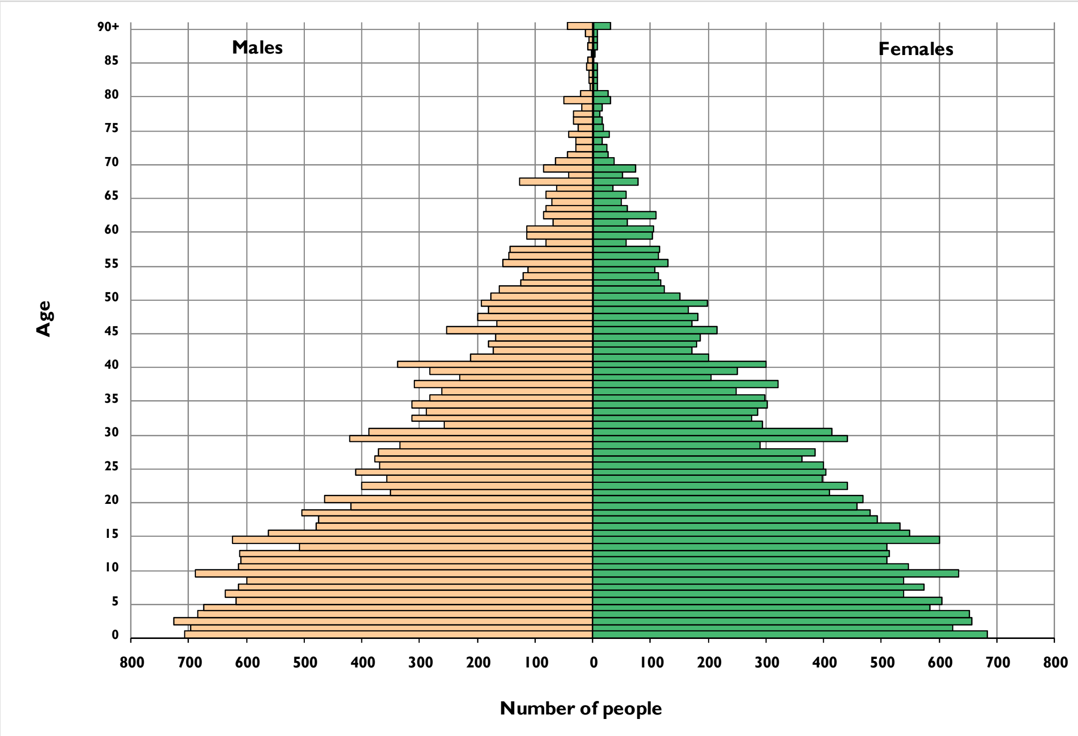


Figure 14: Population pyramid by single years, Penama: 2009

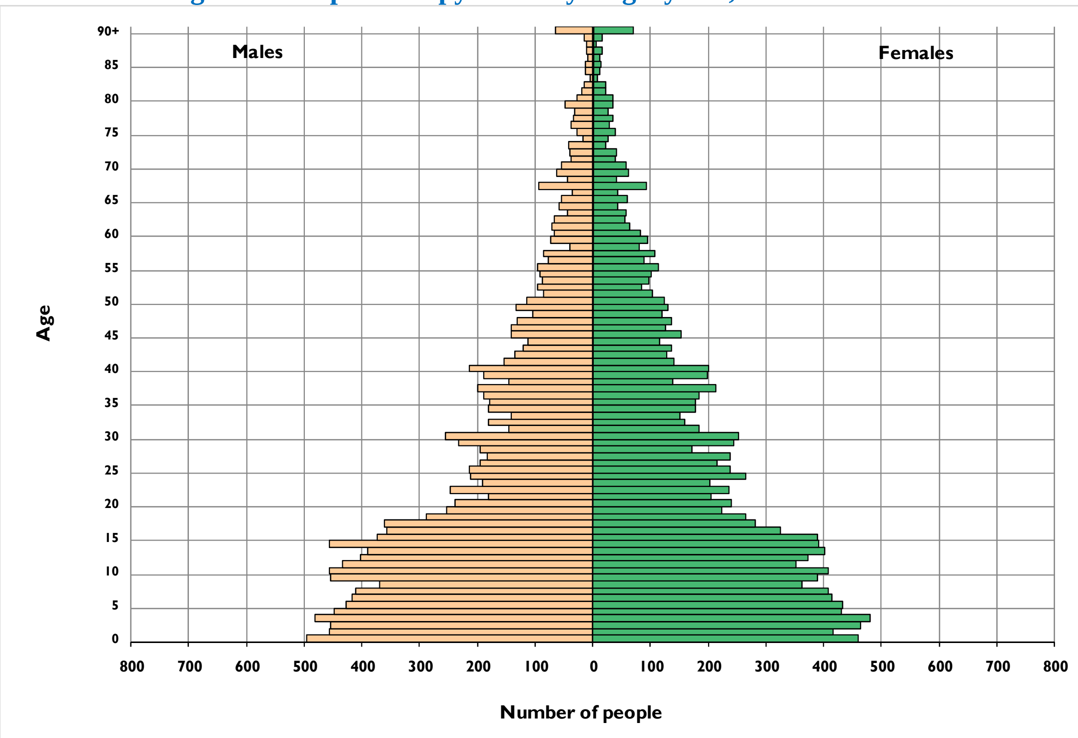


Figure 15: Population pyramid by single years, Malampa: 2009

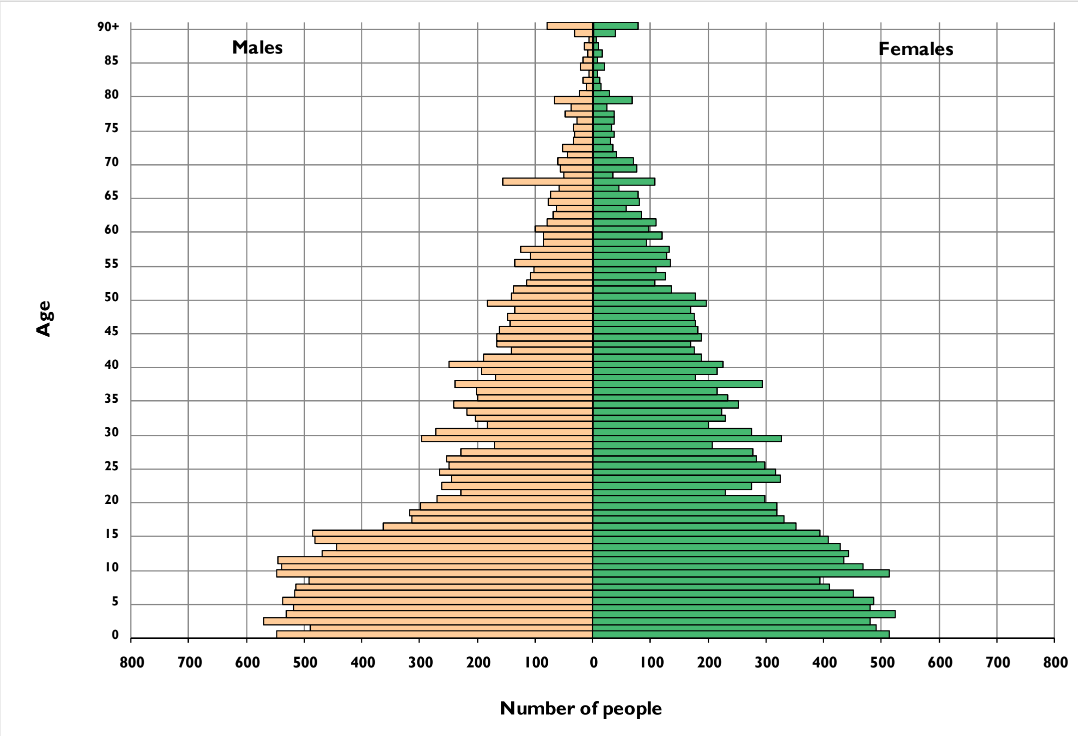


Figure 16: Population pyramid by single years, Shefa: 2009

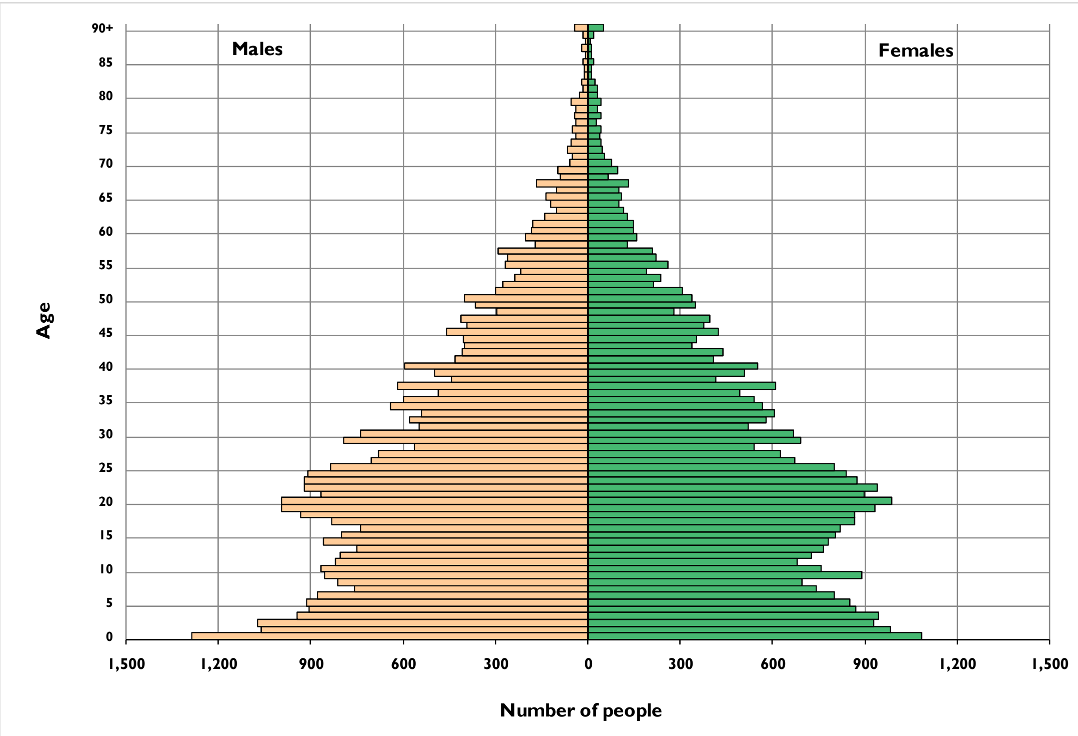
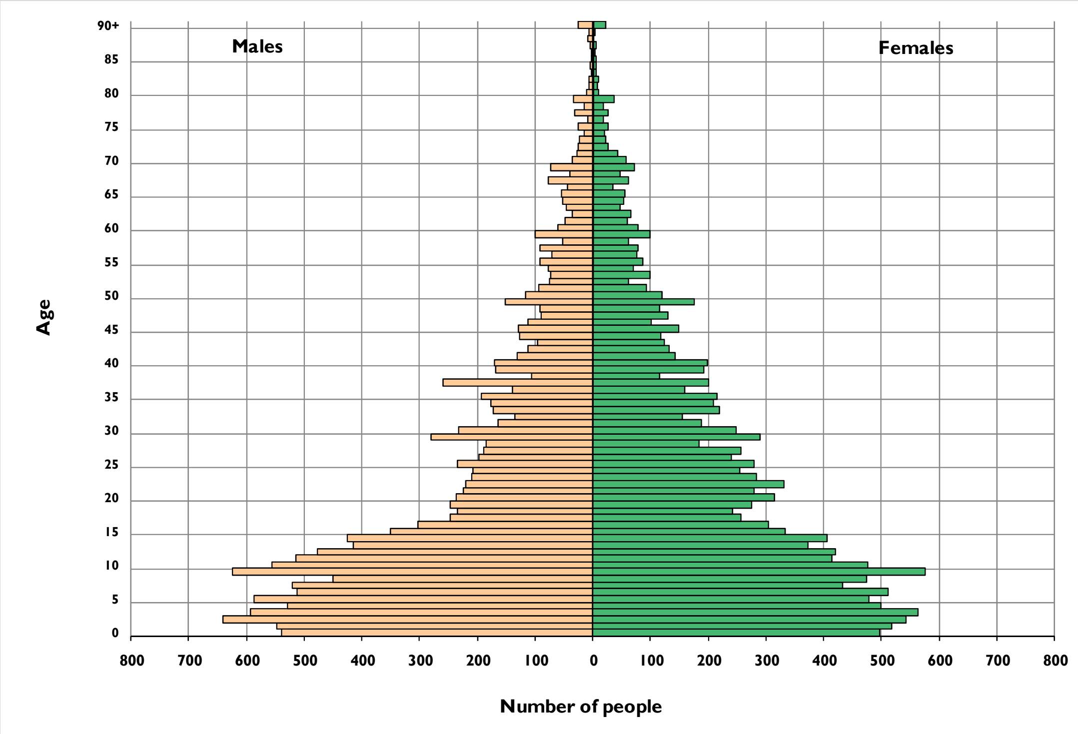


Figure 17: Population pyramid by single years, Tafea: 2009



In accordance with the overall population structure as illustrated by the population pyramids, several indicators can be calculated such as the *median age* and the *age dependency ratio.* Vanuatu population has a relatively young age structure, with 39 % of the population younger than 15 years of age; 55% are in the so called working age groups 15-59, and 6% were older than 60 years (see Table 5 and Fig.18).

There is a direct link between the size and proportion of young people, and the median age. The age structure is also illustrated by the median age of 20.5 years (Fig.19), meaning that half of the Vanuatu' population was younger and the other half older than 20.5 years. The median age in 1999 was only 18.8 years, indicating that the population structure was older in 2009 compared to 1999.

Shefa had over 60% of its population in the age group 15-59 (Fig.18), caused by the influx of migrants from the other provinces. With a median age of 22.6 years, Shefa had the highest in the country. On the other hand, Shefa, like Sanma, had the lowest proportion of people aged over 60 years.

Figure 19 shows a comparison of the *median* age by province which varies widely. While the median age was within the range of 19-22 years for all provinces, it was much less for Tafea at only about 17 years.

Table 5: Population distribution by broad age group, dependency ratio, median age, and sex ratio, Vanuatu: 1999 and 2009

Province	Year	Proportion of population by broad age group (in %)				Age dependency ratio (15–59)	Median age (years)	Sex ratio (males per 100 females)
		0–14	15–24	25–59	60+			
Vanuatu	1999	43	18	34	5	91	18.8	105
	2009	39	19	36	6	81	20.5	104
Torba	1999	47	17	30	6	111	16.8	103
	2009	43	18	33	6	95	18.7	102
Sanma	1999	44	19	33	4	90	18.0	107
	2009	40	20	35	5	82	19.6	106
Penama	1999	43	18	32	7	100	18.5	106
	2009	41	17	34	8	96	19.3	102
Malampa	1999	42	18	33	7	96	18.9	104
	2009	40	17	35	8	92	20.4	101
Shefa	1999	39	19	38	4	75	20.9	107
	2009	33	23	39	5	61	22.6	106
Tafea	1999	48	17	31	5	112	16.4	101
	2009	46	16	32	6	108	17.1	99

Figure 18: Population by broad age groups (in %) by province, Vanuatu: 2009

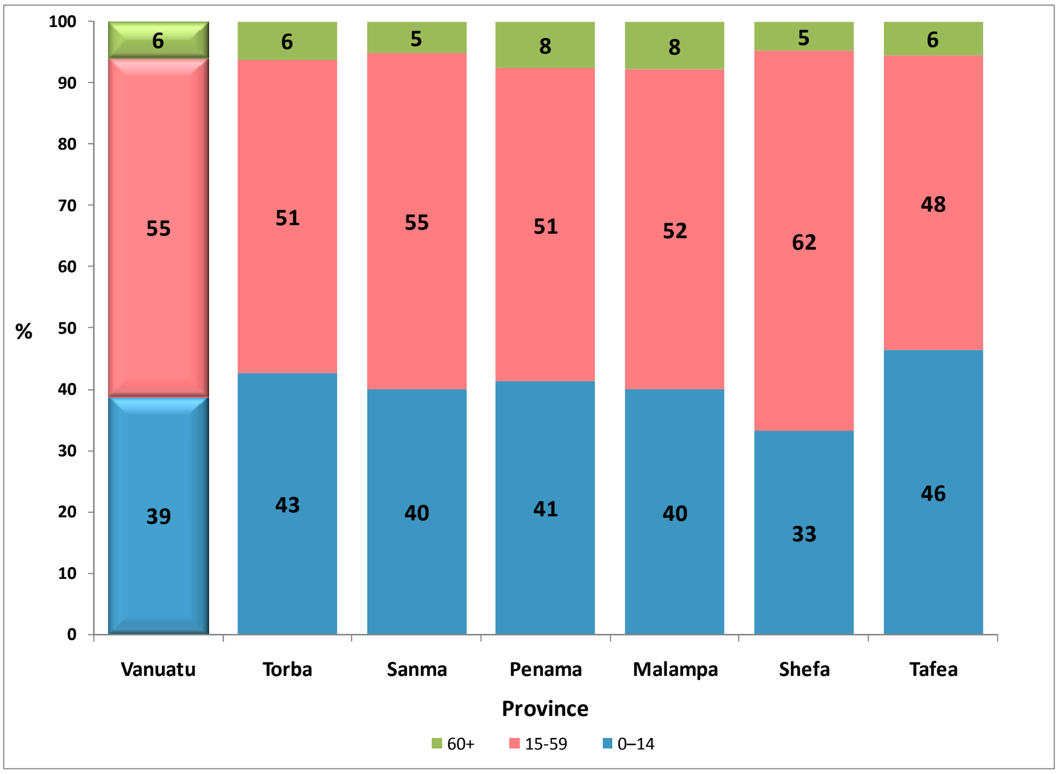
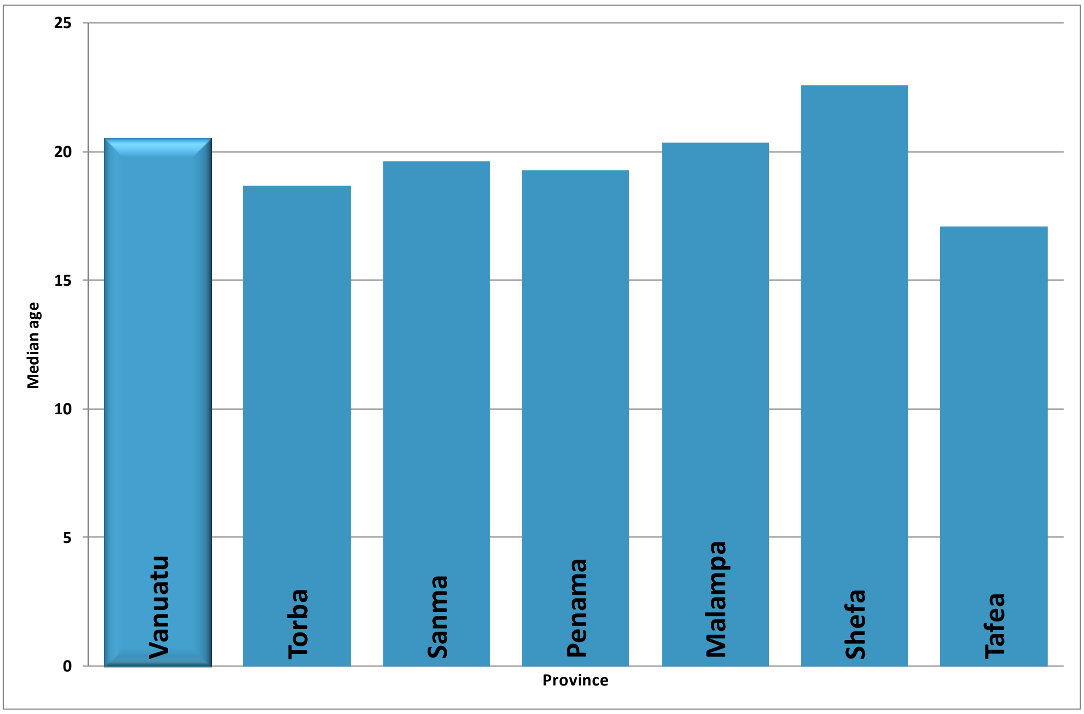


Figure 19: Population by median age and province, Vanuatu: 2009



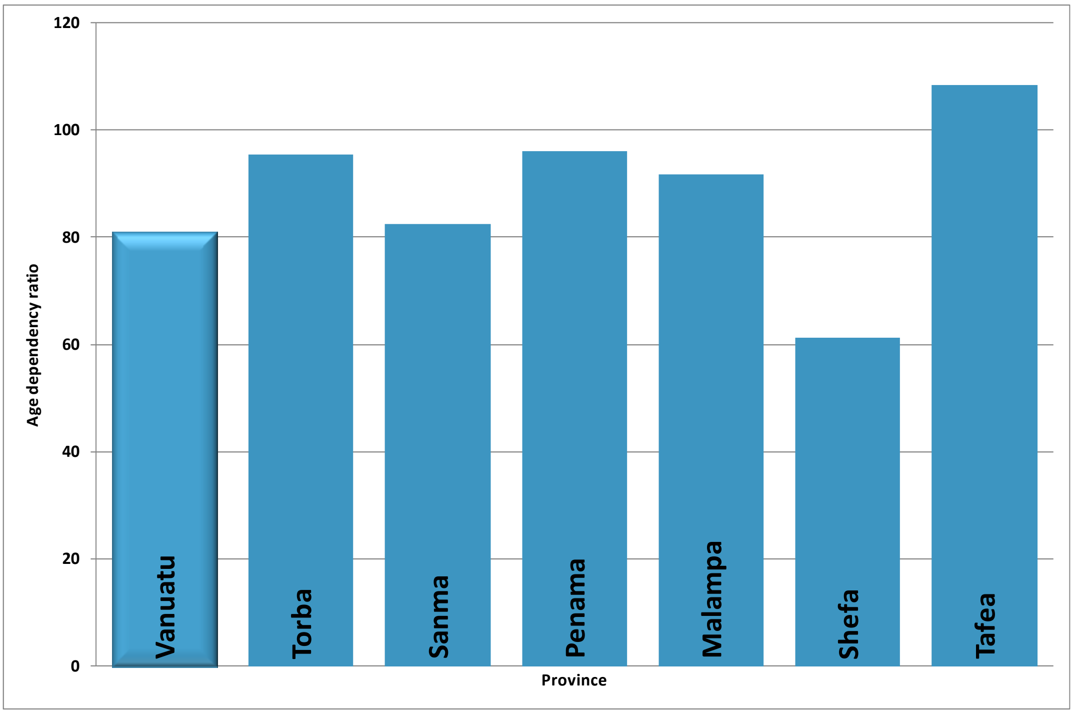
A common way to describe a population's age structure is via the *age dependency ratio*, which compares the dependent component of a country's population with its economically productive component. This is conventionally expressed as the ratio of young people (0–14 years) plus the old (60^+ years), to the working age population (15–59 years) as shown in Figure 20.

In 2009, Vanuatu had a dependency ratio of 81, meaning that for every 100 people of working age, 81 people were in the age dependent category. The higher the dependency ratio, the higher the number of people that needs to be cared for by the working age population. The dependency ratio has decreased since the 1999 census when it was 91. Based on the population structure of the different provincial populations, the age dependency ratios of the different provinces vary accordingly.

The most favorable dependency ratio can be found in Shefa with only 61 dependent people per 100 people of working age. Dependency ratios were much higher in Tafea, Penama and Torba. Tafea registered the highest dependant population of 108 meaning there were more people of the old and young ages than people in the working age groups. Looking at its broad age group Tafea has the highest number of people in the age group 0-14 compared to the other provinces and also the least number of people in the working age group (15-59) paving the way for a higher dependant population.

For detailed information on population trends and age structure of the different provinces please refer to Appendix 27.

Figure 20: Population by age dependency ratio and province, Vanuatu: 2009



2.5 Urbanization

According to Pranati Datta[3]'s paper on urbanization in India, urbanization is an index of transformation from traditional rural economies to a modern industrial one. Davis Kingsley describes it as a progressive concentration of population in urban areas and it is a process through which a nation passes as they evolve from agrarian to industrial society (in Pranati Datta, 2006).

Urbanization occurs as a result of people's choice of wanting to reside in the urban areas. More people are changing residence from rural to urban areas, and increasing proportions of these people are selecting large cities and towns. These events produce two aspects of urbanization whose measurements should be differentiated - an increase in the proportion of people selecting urban areas of residence and natural increase in cities and towns.

[3] Pranati Datta, 2006, Urbanization in India, pg.2 [online]

2.5.1 Urban growth

Despite declining growth rates (Fig. 21) the population continues to increase (Fig. 22). While the average annual population increase during the period 1989-1999 was 1,354 people with a 4.2% growth rate, it increased to 1,708 people annually during the period 1999-2009 despite a lower growth rate of only 3.5%.

Figure 21: Urban average annual population growth rate (%), Vanuatu: 1967–2009

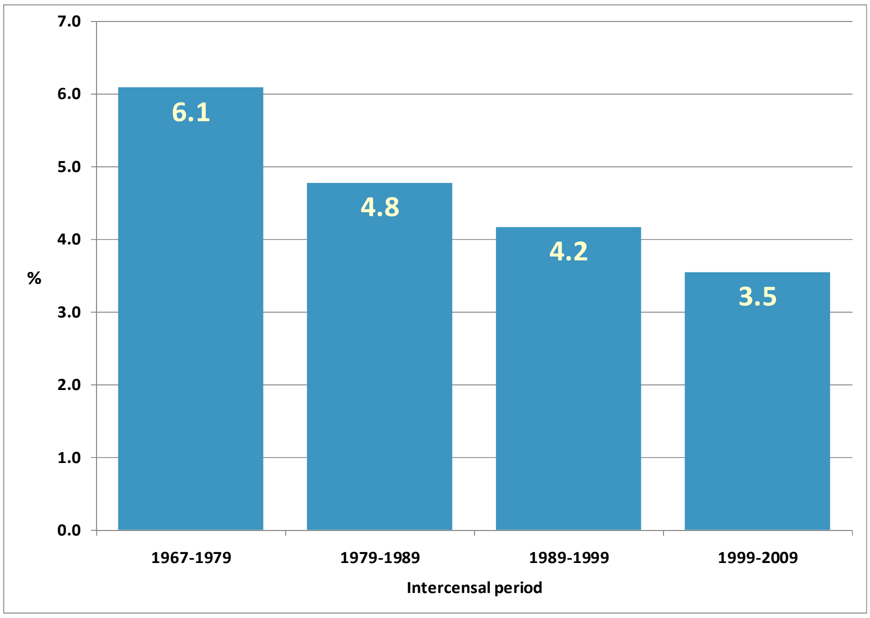
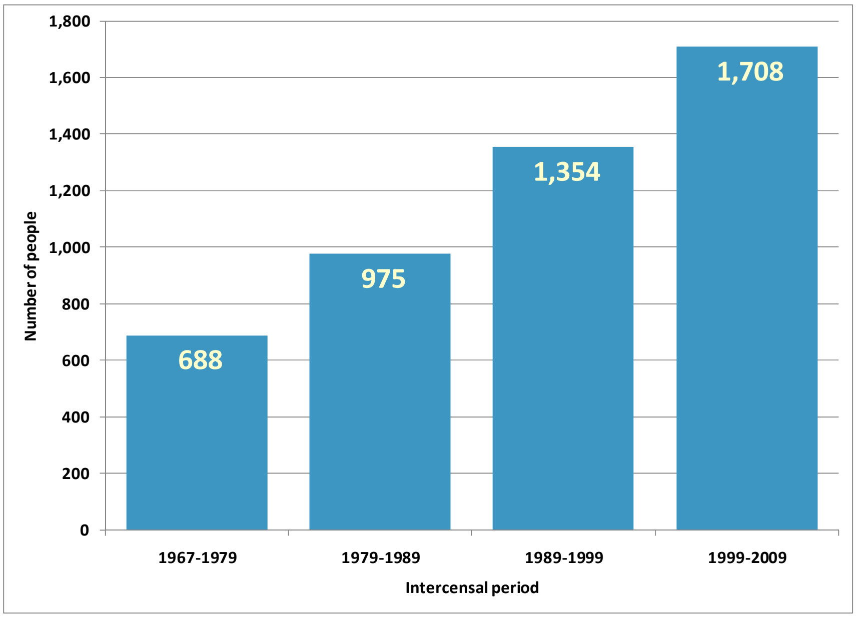


Figure 22: Urban population change, average annual increase in numbers, Vanuatu: 1967–2009

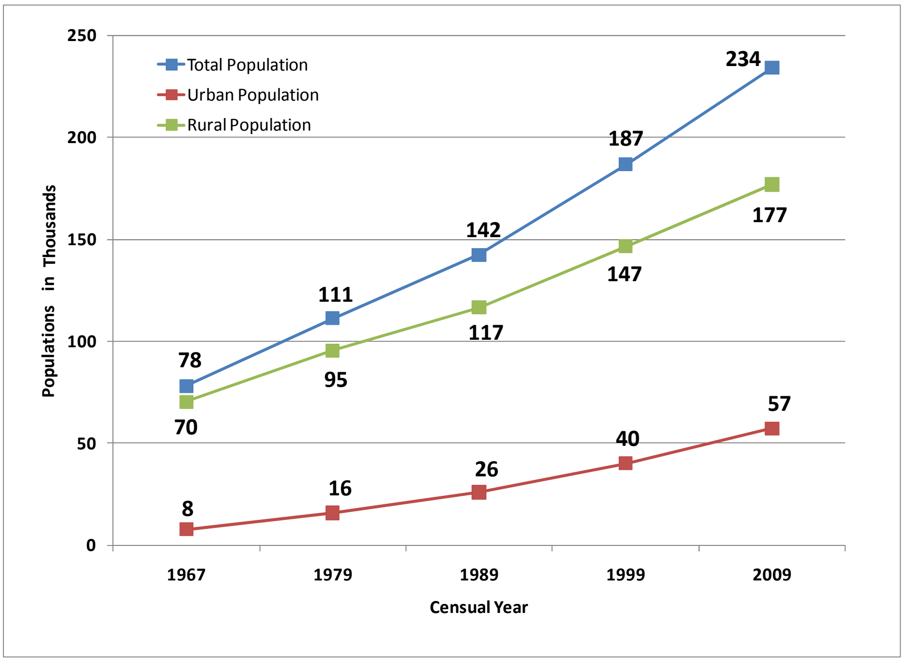


2.5.2 Process of urbanization

Kingsley mentions three stages in the process of urbanization. Stage one is characterized by a rural traditional society with predominance in agriculture and dispersed pattern of settlements. Stage two refers to an acceleration stage where basic restructuring of the economy and investments in social overhead capitals including transportation and communication take place. In addition the proportion of urban population gradually increases from 25% to 40%, 50%, 60% and so on. The third stage is when urban population exceeds 70% or more. At this stage the level of urbanization remains more or less the same or constant and the rate of growth of the urban population and total population becomes similar.

Since the year 1967 the Vanuatu population and the urban population have been increasing. Given an increase from 8 thousand people in 1967 to 57 thousand people in 2009, Vanuatu's urban centers gained 49 thousand people since 1967. Figure 23 illustrates this comparison and trend.

Figure 23: Process of urbanization, Vanuatu: 1967-2009



2.5.3 Degree of urbanization

The degree or level of urbanization is defined as the relative number of people who live in urban areas[4]. Several indices have been drawn to measure particular aspects of degree of urbanization at a given time. These measures are percent urban [UP/TP*100], percent rural [RP/TP*100] and the urban/rural ratio [UP/RP*100].

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[4] Pranati Datta, 2006, Urbanization in India, pg.5 [online]

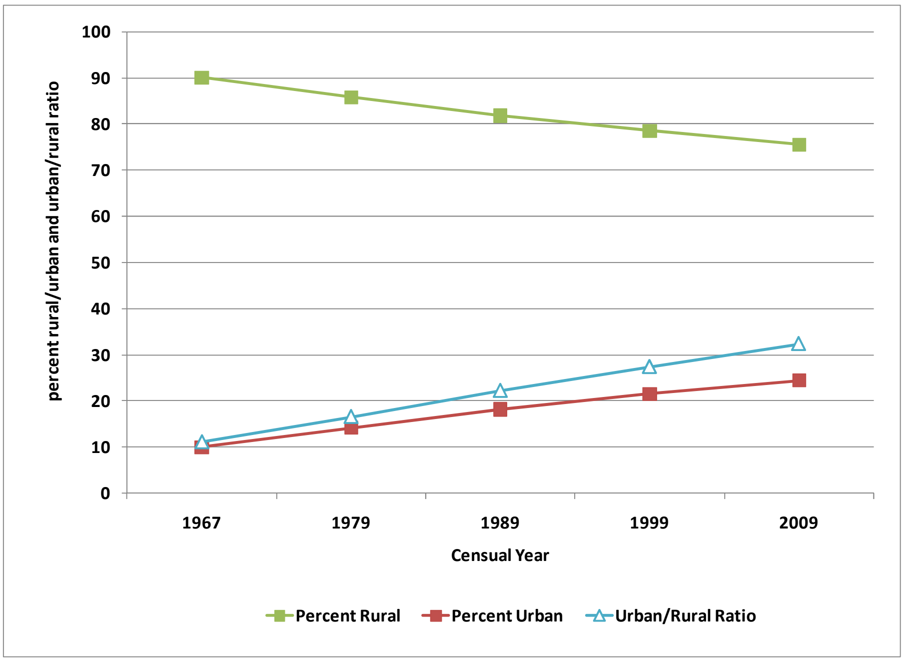
Table 6: Degree/level of urbanization, Vanuatu: 1967-2009

Census Year	Population			Percent Rural	Percent Urban	Urban/Rural Ratio
	Total (TP)	Urban (UP)	Rural (RP)			
1967	77,988	7,772	70,216	90.0	10.0	11.07
1979	111,251	15,784	95,467	85.8	14.2	16.53
1989	142,419	25,870	116,549	81.8	18.2	22.20
1999	186,678	40,094	146,584	78.5	21.5	27.35
2009	234,023	57,195	176,828	75.6	24.4	32.34

The trend shown in Table 6 and Figure 24 is that urbanization is constantly increasing. Since 1967, the share of the urban population increased by more than ten percent. Obviously as the proportion of the urban population increases the proportion of the rural population must decrease at the same time.

Based on the three stages of urbanization described by Kingsley, Vanuatu would be ranked in the first stage, because the proportion of urban is still less than 25%. In addition, Vanuatu's rural traditional society is still characterized by predominance in agriculture and a dispersed pattern of settlements.

Figure 24: Process of urbanization, Vanuatu: 2009



2.5.4 Tempo of urbanization

The tempo of urbanization refers to the speed of urbanization and measures the change in the level of urbanization by analyzing changes in the indices used for measuring the degree of urbanization. The measurement of urbanization tempo indicates the pace at which a specific area is urbanizing. If a degree of urbanization in a country or province is known for two or more dates, the tempo is measured by the annual change in the index used for measuring the level of urbanization. Although potentially useful, this procedure of measuring the tempo may require some caution depending on the index used for measuring the level of urbanization.

Table 7: Tempo of urbanization, Vanuatu: 1967-2009

Census Year	Population Growth Rate			Percent urban growth rate	Percent Rural growth rate	urban/rural ratio growth rate
	Total	Urban	Rural			
1967-1979	3.1	6.1	2.6	3.0	-0.4	3.5
1979-1989	2.4	4.8	1.9	2.4	-0.5	2.9
1989-1999	2.6	4.2	2.2	1.6	-0.4	2.0
1999-2009	2.3	3.5	1.9	1.3	-0.4	1.6

One quick index for measuring the tempo of urbanization is the difference between the annual population growth rates of urban and rural areas. For example, in Vanuatu the annual population growth rates during the most recent census period (1999-2009) for urban and rural areas were 3.5 percent and 1.9 percent, respectively; the urbanization tempo is 1.6 percent per year (Table 2.7).

The other index for measuring the tempo of urbanization is by using the "urban/rural ratio". It is also related to the difference between the two mentioned rates (annual population growth rates of urban and rural areas). If the urban/rural ratio is known for more than one date, the annual exponential growth rate of the urban/rural ratio is also the difference between the urban and rural annual population growth rates. For Vanuatu, in 2009, the annual exponential growth rate of "urban/rural population ratio" is 1.6, which is equal to the difference between the urban population growth rate of 3.5 percent and rural population growth rate of 1.9 percent. According to Pranati Datta[5], the main advantage of using this method compared to others for measuring tempo of urbanization is that it does not drop to zero when the country approaches the 100 percent level of urbanization; however it does regress toward the growth rate of the urban population.

Measuring the tempo of urbanization, not only makes sense for determining how fast one area is growing in relation to the other, but is also related to the indices for measuring the level of urbanization. Thus by using the urban/rural ratio we can be sure to have an appropriate measuring index.

[5] Pranati Datta, 2006, Urbanization in India, pg.9 [online]

Figure 25: Annual growth rate of "Urban/Rural Ratio" measuring the tempo of urbanization, Vanuatu: 1967-2009

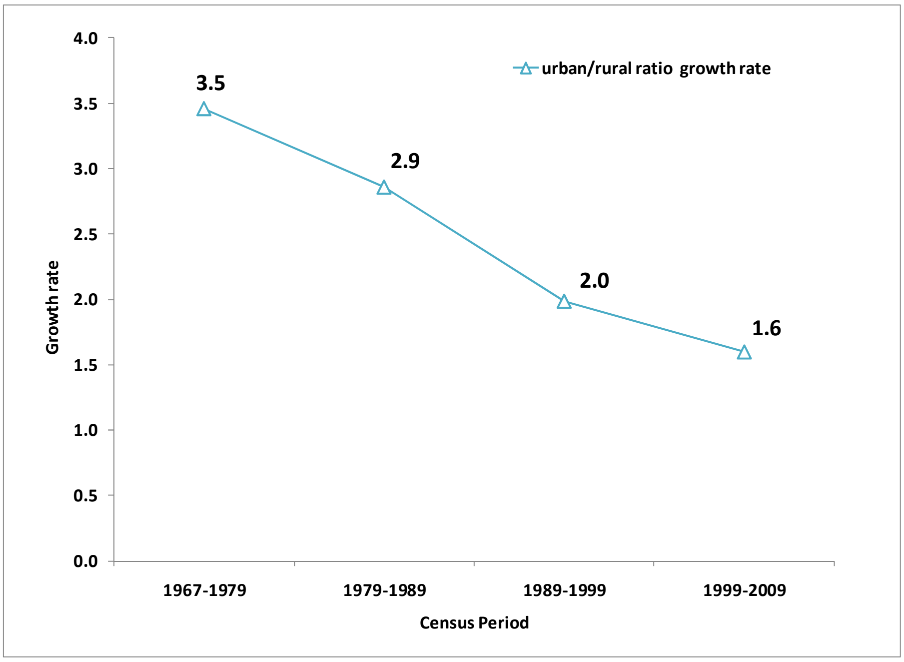


Figure 25 presents the trend of annual growth rates relating to the "urban/rural ratio" during the period 1967-2009. It shows the declining pace of urbanization in Vanuatu. One reason for this decline could be related to the timing of the population censuses. The 1989, 1999 and 2009 censuses were conducted at the time of school holidays, when most urban residents (parents and children) may have returned to "home islands" for Christmas and school holidays. Another reason is maintaining the same Enumeration Areas (EA) overtime may contribute to the decline. Some EA's that are currently still classified as rural should probably be classified as urban since these areas are showing characteristics of urban sprawl.

3. DEMOGRAPHIC COMPONENTS

3.1 Fertility

3.1.1 National estimates

In order to determine the level and pattern of fertility in Vanuatu, women 15 years of age and older were asked the following questions:

- how many children they had born alive; and
- when was their last child born.

The total number of children born alive to 71,486 women aged 15 and older was 189,333; 98,638 males and 90,695 females (Table 8). The average number of children born alive to all women (average parity) was 2.6 children per woman.

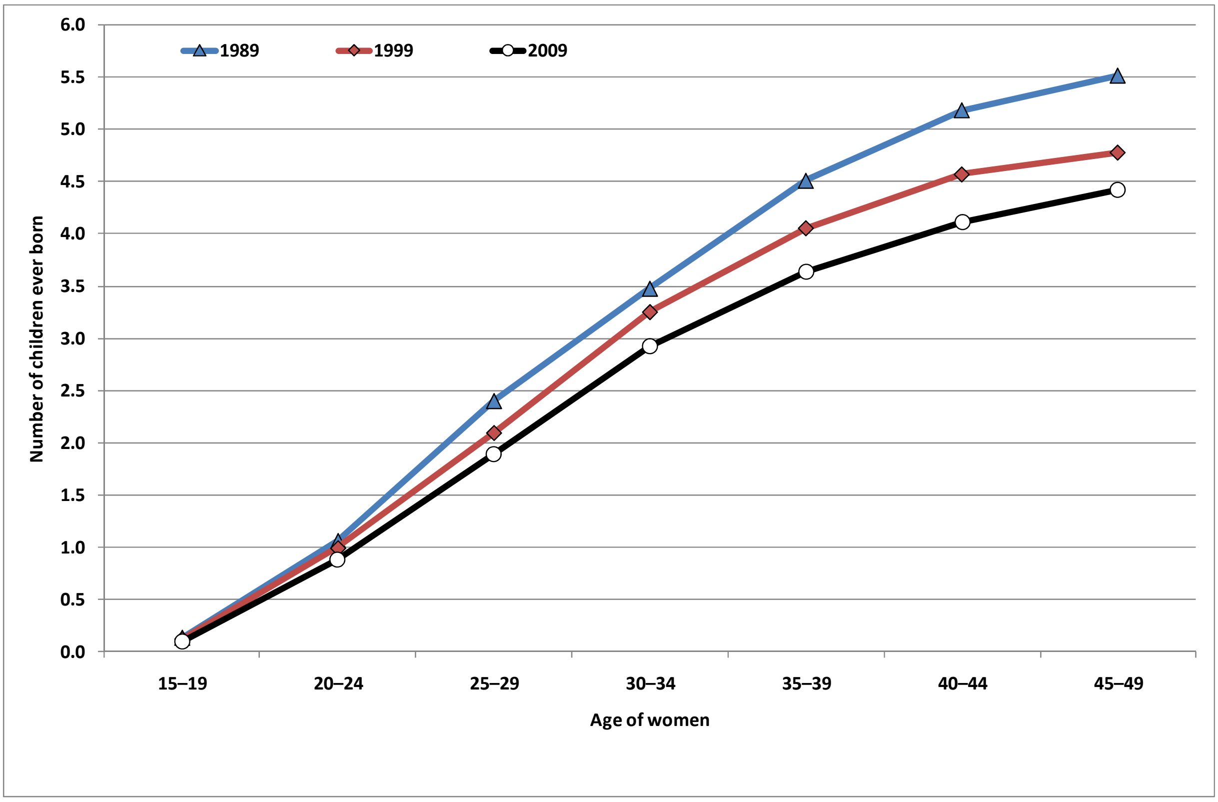
Table 8: Female population aged 15 and older by number of children ever born alive, Vanuatu: 2009

Age of women	Number of women	Number of children ever born			Average number of children ever born		
		Males	Females	Total	Males	Females	Total
15–19	11,855	600	544	1,144	0.1	0.0	0.1
20–24	11,126	5,120	4,745	9,865	0.5	0.4	0.9
25–29	9,291	9,209	8,423	17,632	1.0	0.9	1.9
30–34	7,903	12,072	11,064	23,136	1.5	1.4	2.9
35–39	7,095	13,405	12,385	25,790	1.9	1.7	3.6
40–44	5,709	12,227	11,234	23,461	2.1	2.0	4.1
45–49	5,175	11,807	11,056	22,863	2.3	2.1	4.4
50–54	3,626	8,746	7,970	16,716	2.4	2.2	4.6
55–59	3,102	7,941	7,322	15,263	2.6	2.4	4.9
60–64	2,127	5,583	5,075	10,658	2.6	2.4	5.0
65–69	1,772	4,912	4,386	9,298	2.8	2.5	5.2
70+	2,705	7,016	6,491	13,507	2.6	2.4	5.0
Total	**71,486**	**98,638**	**90,695**	**189,333**	1.4	1.3	**2.6**

Average parity increases with the age of women. While women aged 15–19 had only very few children, women aged 45–49 had 4.4 children, and women older than 70 had on average 5 children. The average parities of women over 49 years of age is also called the *completed fertility rate*, a cohort measure demonstrating how many children a certain cohort of women who have completed their childbearing actually produced during those years.

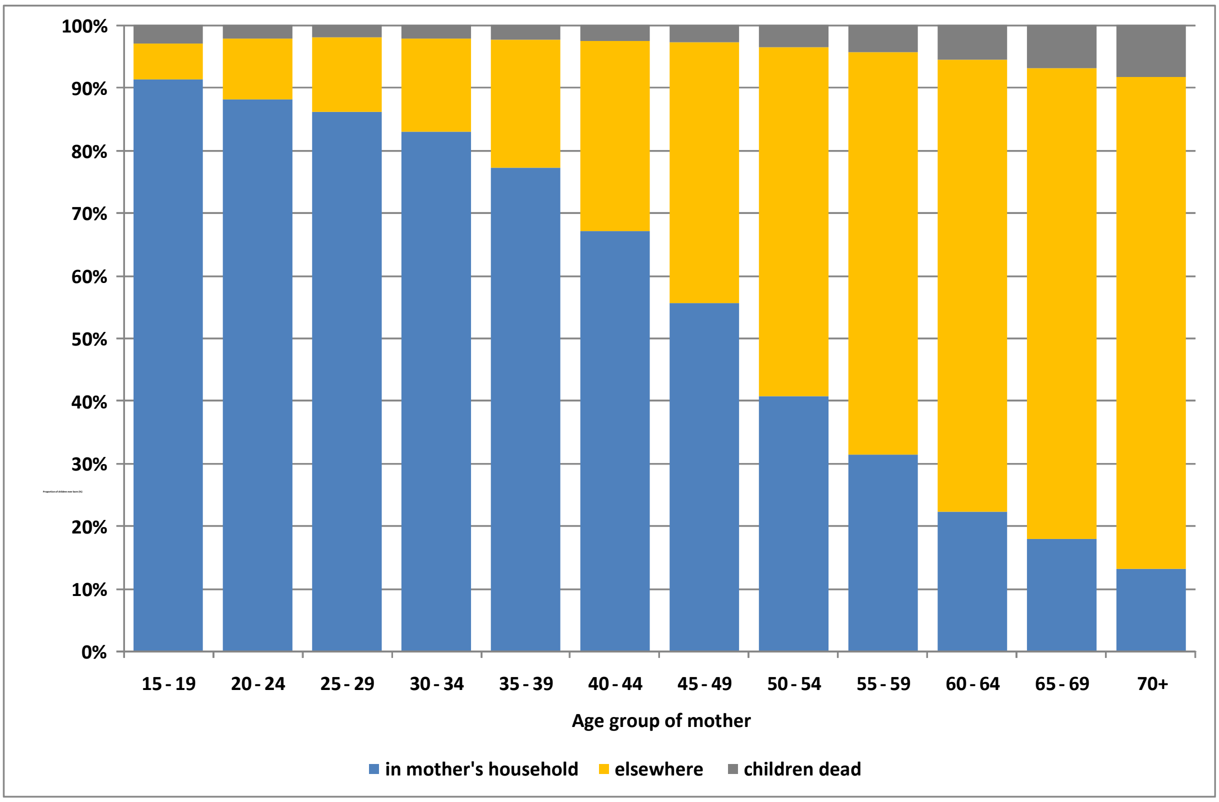
Figure 26 shows a comparison of the reported average number of children ever born of the last three censuses. A fertility decline is apparent as the average number of children per woman at every age declined from one census to the next. While the average number of children of women aged 45-49 years was 5.5 in 1989, it declined to 4.8 and 4.4 in 1999 and 2009.

Figure 26: Female population aged 15-49 by average number of children ever born alive, Vanuatu: 1989, 1999, and 2009



The census also included questions on whether mother's children lived in her household or elsewhere, or whether they have died (Fig.27). The proportion of children living in their mother's household decreased with the age of the mother, because as children grow older they leave their parents' home and form their own household.

Figure 27: Proportion of children ever born by age of mother and whether living in the same household as their mother, Vanuatu: 2009



From the question on date of birth of the last born child, the number of births per year or period can be calculated (Table 9).

Table 9: Reported number of births during the one-year period before the census (17 November 2008 – 16 November 2009) by age group of women, Vanuatu: 2009

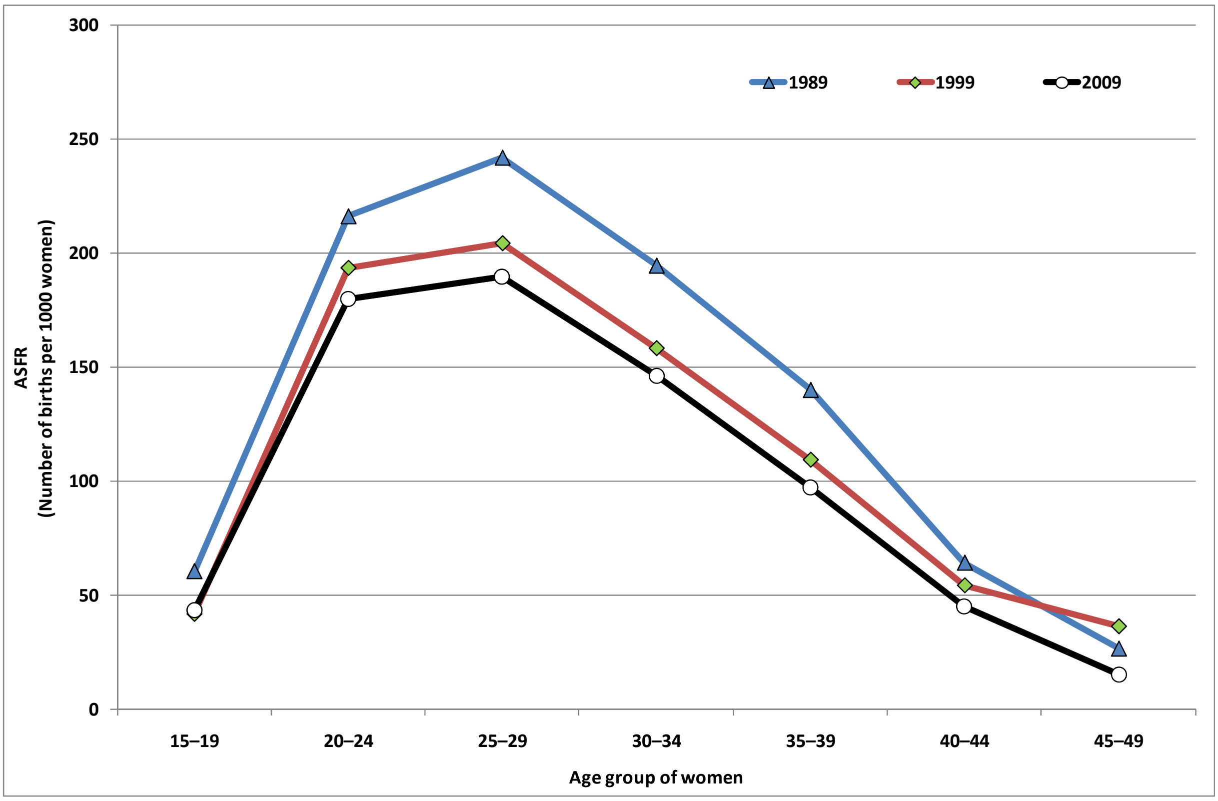
Age group of women	Number of women	Number of children	ASFR*
15–19	11,855	516	0.044
20–24	11,126	2003	0.180
25–29	9,291	1763	0.190
30–34	7,903	1155	0.146
35–39	7,095	692	0.098
40–44	5,709	257	0.045
45–49	5,175	79	0.015
Total	**58,154**	**6,465**	**TFR = 3.6**

ASFR = Age-Specific Fertility Rate
TFR = Total Fertility Rate

Responses from women during the 2009 census indicated that 6,465 children were born during the one-year period prior to the census, between November 2008 and November 2009 (Table 9). However, this count compares with 7,105 children younger than one year of age enumerated during the census. This mismatch of counts suggests that a sizeable number of women did not report the birth of their child during the year prior to the census, or did not accurately report the exact date of birth of their children. Unfortunately, the number of registered deaths (from Vanuatu's vital registration system) is not available, and a comparison of census data is not possible.

Figure 28 shows a comparison of the above data of the last 3 censuses. Again it can be seen that the fertility level of women of all ages declined since 1989. Fertility levels have especially decreased of women aged 25-39 years, while fertility levels of women aged 15-19, and 45-49 have only marginally changed.

Figure 28: Reported age-specific-fertility-rates (ASFR), Vanuatu: 1989, 1999, 2009



In order to estimate Vanuatu's fertility level, this analysis relies on indirect estimation techniques.

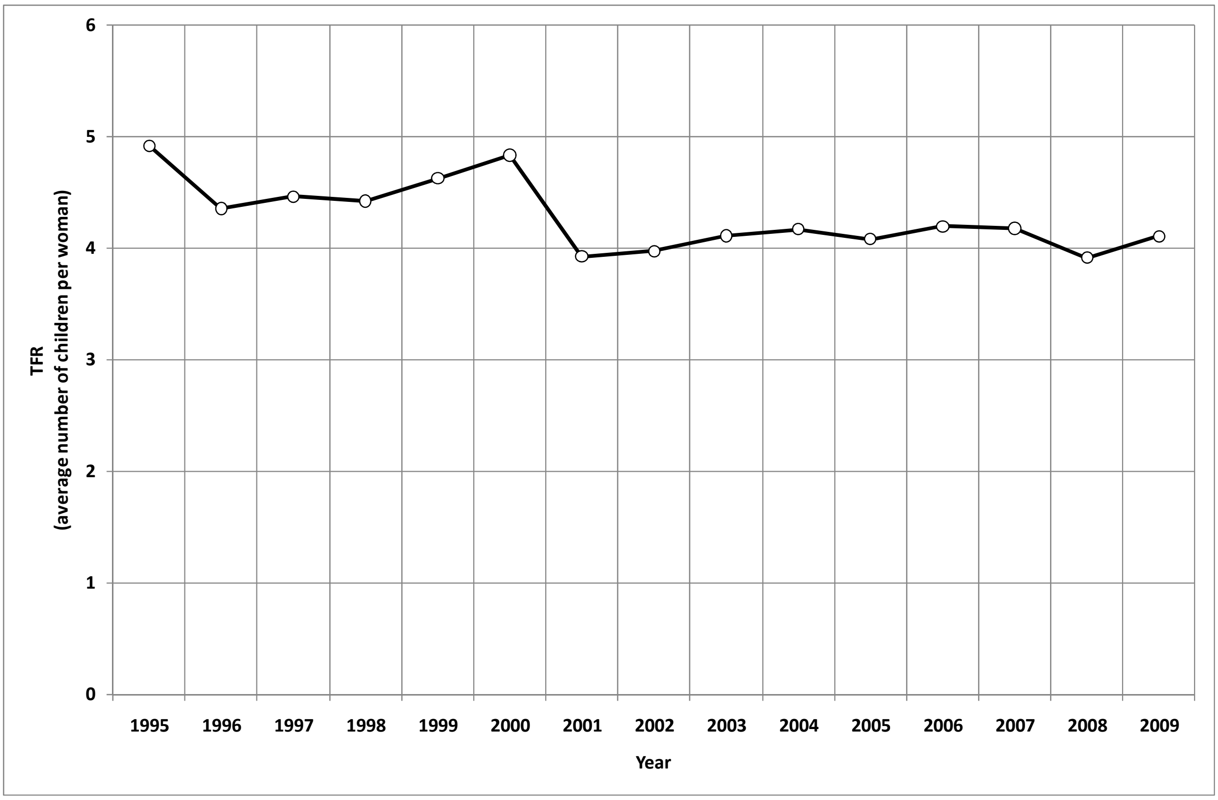
First, the *own-children method* was applied to the census data, which is a procedure deriving ASFRs for a 10- or 15-year period from a special census tabulation of children classified by age, and age of mother, both ages being given in single years at the time of the census. Age of mother can be determined only for those children who are enumerated in the same household as their mother (i.e. who are "own children" of a woman present in some enumerated household, hence the name of the method). The results of the own-children method were kindly prepared and provided Mr. Michael Levin of the Harvard University Center for Population and Development Studies.

Secondly two variants of the P/F-Ratio method were applied, using census data on the number of children ever born by age of women, and the number of children born during the year prior to the census by age of women as reported in the census.

The demographic indicator most commonly used to describe a country's fertility situation is called the total fertility rate (TFR). This measure is an indication of the average number of children a woman gives birth to during her reproductive life (from ages 15–49 years). It is calculated from the number of live births by age of women in a given year — the age-specific fertility rates (ASFRs).

Fertility estimates derived using the own-children method from the 2009 censuses show two distinct periods; the period 1995-2000 with a fertility level (TFR) of well above 4, and the period 2001-2009 when the level has remained constant of the 8-year period at a level of about 4 children per woman (Fig.29).

Figure 29: Estimates of TFR based on "own-children method", Vanuatu: 1995–2009



Source: Michael Levin, Harvard University Center for Population and Development Studies

Results of the own-children method were compared with estimates derived by applying the Arriaga[6] method — which measures fertility based on data in one or two points in time. The difference between both methods is that the method using two points in time assumes changing (declining) fertility, while the method using only one point in time assumes constant fertility. The software MORTPAK 4.1, procedure FERTPF (from the United Nations) was used (Apps.2 to 4).

Table 10 compares the estimated fertility levels derived by the different methods.

Table 10: Comparison of TFR estimates derived by various methods, Vanuatu: 1999 and 2009

Year	Own-children method[1]	Arriaga Method, using 1 point in time[2]	Arriaga Method, using 2 points in time: 1999 and 2009[2]	Trussell P/F Ratio Technique[3]	Relational Gompertz method*
1999	4.6	4.7	4.4	4.7	4.6
2009	4.1	4.1	3.8	4.1	4.1

[1]1999 estimates refer to 3-year period 1998-2000 and estimate for 2009 refers to period 2007-9
[2]using adjustment factors of women aged 20-29
[3] using adjustment factors of women aged 25-34
*using average of age group 20-39 of 2+2 points based on ASFR and CEB

Since the own-children estimates show that fertility levels remained relatively constant during the period 2001-2009 (Fig.29), the underlying assumptions of the Arriaga method using two points in time of changing fertility does not comply with the Vanuatu demographic situation, and therefore its results should be rejected. On the other hand, the estimated TFRs derived by the own-children method and the Arriaga method using only one point in time which assumes constant fertility, show consistent results.

Furthermore the Trussel P/F Ratio method (App.5-6) as well as the Relational Gompertz method (App.7) confirms values produced by the own-children method.

[6] Many censuses and surveys include questions related specifically to fertility, for example, the numbers of children women have ever had, and whether they had a birth in the year preceding the inquiry.

The method seeks to adjust the level of observed age-specific fertility rates, which are assumed to represent the true age pattern of fertility, to agree with the level of fertility indicated by the average parities (average number of children ever born) of women in age groups under 30 or 35, which are assumed to be accurate. During successful application of this method, the age pattern of the period fertility rates is combined with the level implied by the average parities of younger women to derive a set of fertility rates that is generally more reliable than either of its constituent parts.

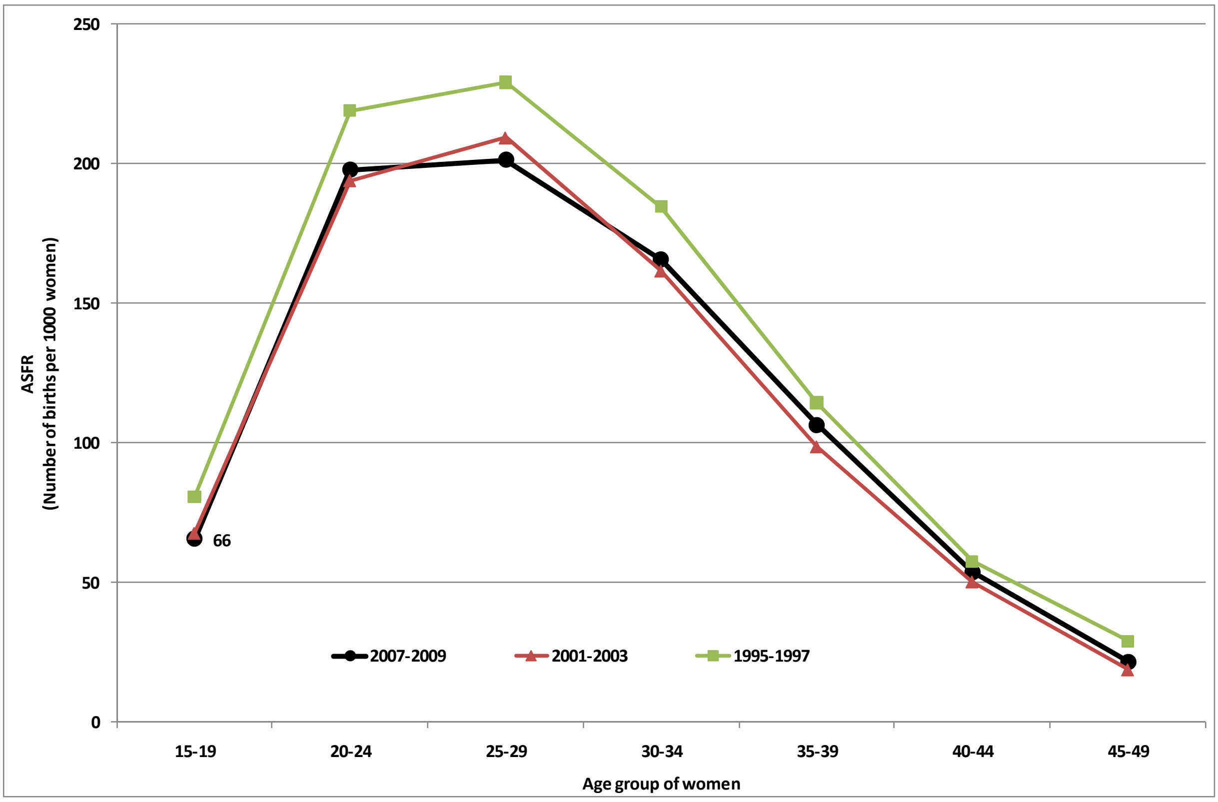
Responses to such questions can be used to estimate fertility indirectly. Some techniques for doing this include the parity/fertility (P/F) ratio method developed by Brass, based on the average number of children ever born to women in five-year age groups, and women's age pattern of fertility derived from births in the year preceding the census or survey; and the Arriaga technique, which is similar to the P/F ratio method but links data for more than one date. While the Brass P/F ratio method assumes constant fertility in the past, the Arriaga method does not.

According to these estimates the TFR in and around 2009 was 4.1, only about half a child lower than 10 years ago in 1999 when the TFR was about 4.6. This is a very moderate fertility decline during the intercensal period 1999-2009.

The following analysis is based on results derived by the own-children method, as it produces the most detailed information on levels and trend of fertility in Vanuatu by geographic and socio-economic background information of women of the 15-year period before the 2009 census.

The estimated fertility levels by age group of mother (Fig.30) again shows that the fertility levels of women of all ages decreased since the 1990s, but changed very little since the beginning of the new millennium. Women aged 20-29 produced the most children with about 200 children per 1000 women in that age group. The so-called teenage fertility rate, the number of children of women aged 15-19 years, was 66, which means that 66 children were born per 1000 women aged 15-19.

Figure 30: Estimated and adjusted age-specific fertility rates (ASFRs), Vanuatu: 1995 to 2009



Source: Michael Levin, Harvard University Center for Population and Development Studies

The number of births by age of women, and therefore the total number of births during the one-year period around the 2009 census can be calculated by multiplying the adjusted ASFR by the enumerated number of women by age group in the census, and summing the number of births by the age group of women (Table 11).

Table 11: Estimated age-specific fertility rate (ASFR), annual number of births, total fertility rate (TFR), and mean age at childbearing (MAC), Vanuatu: 2009

Age group of women	Number of women	Estimated ASFR	Estimated number of births (ASFR x number of women)
15-19	11,855	0.0656	778
20-24	11,126	0.1979	2,202
25-29	9,291	0.2014	1,871
30-34	7,903	0.1656	1,309
35-39	7,095	0.1066	756
40-44	5,709	0.0538	307
45-49	5,175	0.0217	112
Total	**58,154**		**7,335**
TFR		**4.1**	children per woman
MAC#		**29.3**	years

*Adjusted ASFRs are based on estimates derived using the own-children method of the period 2007-2009

#Mean age at childbearing

The estimated number of births of 7,335 in 2009 seems consistent with the enumerated population aged younger than one year of age of 7,105 children.

Finally the national crude birth rate (CBR) can then be calculated by dividing the estimated number of births (7,335) by the total 2009 census population (234,023), multiplied by 1,000.

CBR = 7,335/234,023 x 1,000 = **31.3** (there were 31 births/1,000 population)

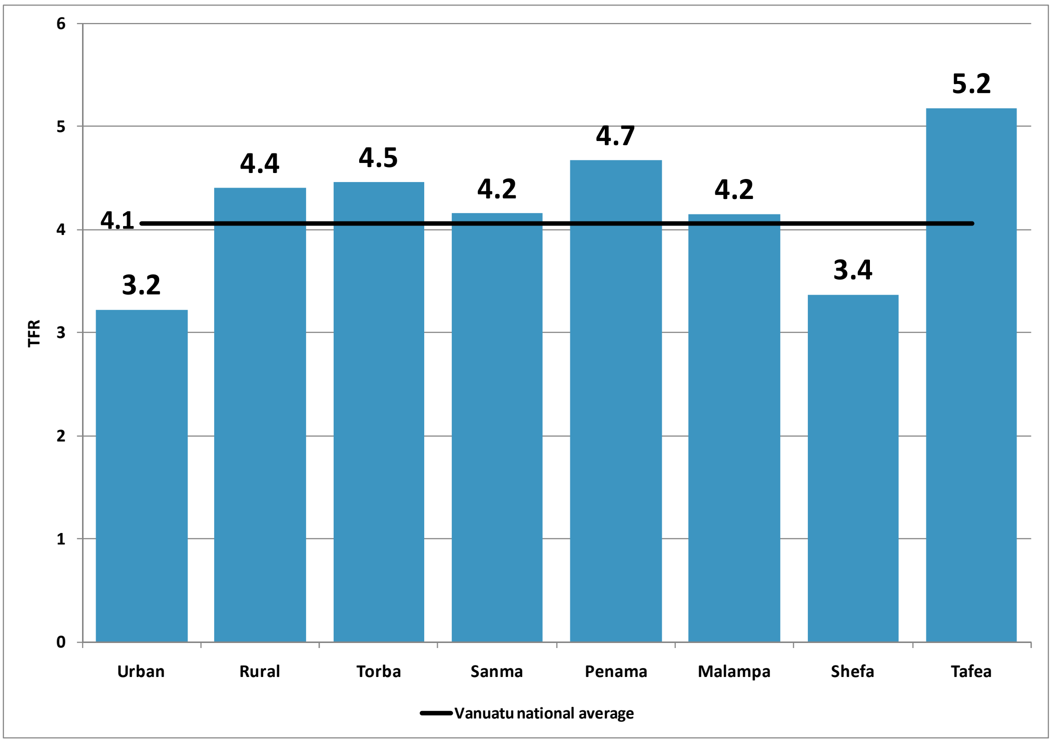
3.1.2 Sub national estimates

This section contains some fertility estimates by urban-rural distinction, and by province. All estimates are based on results derived through application of the own-children method.

The summary of main indicators in the front of the report summarizes various fertility indicators by place of residence.

Not surprisingly, the fertility level in the urban areas was lower than in the rural areas. Furthermore, the province Tafea and Penama had, with 5.2 and 4.7 children per woman, the highest fertility of all provinces, and Shefa with the location of the capital Port Vila has the lowest TFR of 3.4 (Fig.31).

Figure 31: TFR by place of residence, Vanuatu: 2007-2009

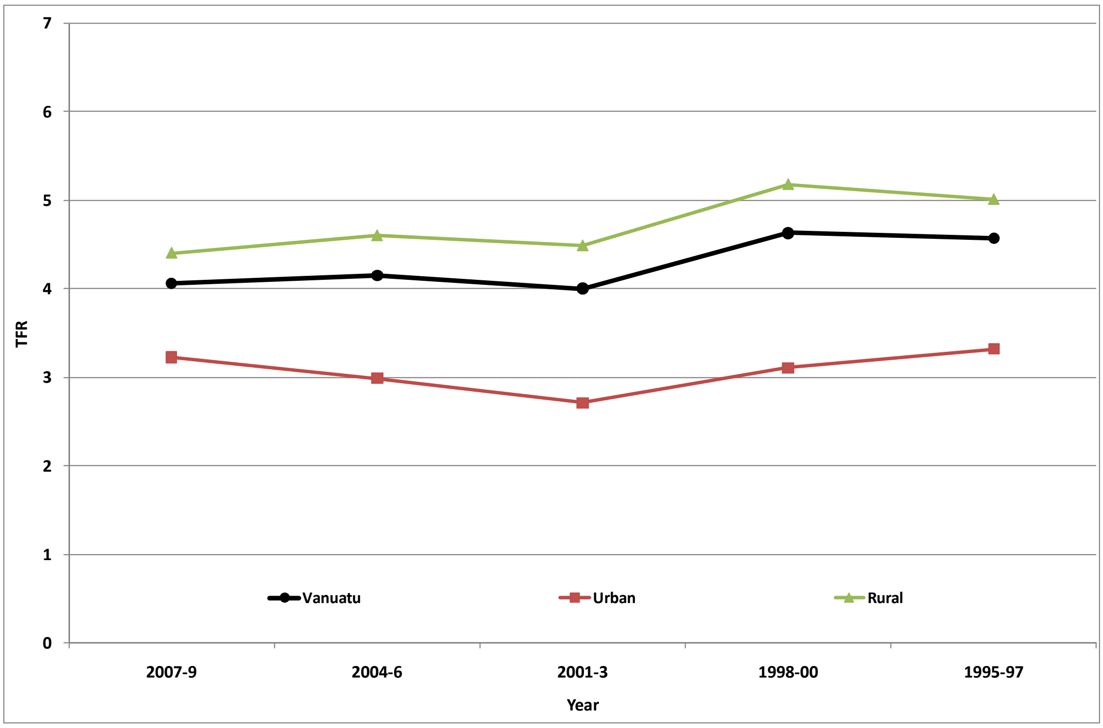


Source: Michael Levin, Harvard University Center for Population and Development Studies

Figures 32-33 show the fertility trend throughout the period 1995-2009 by urban-rural residence and by province. Interestingly the fertility level in the urban areas and the province of Shefa where the capital Port Vila is located, show a slightly increasing trend since 2001-2003. An explanation could be the migration of ‘high fertility’ rural women to the urban centers.

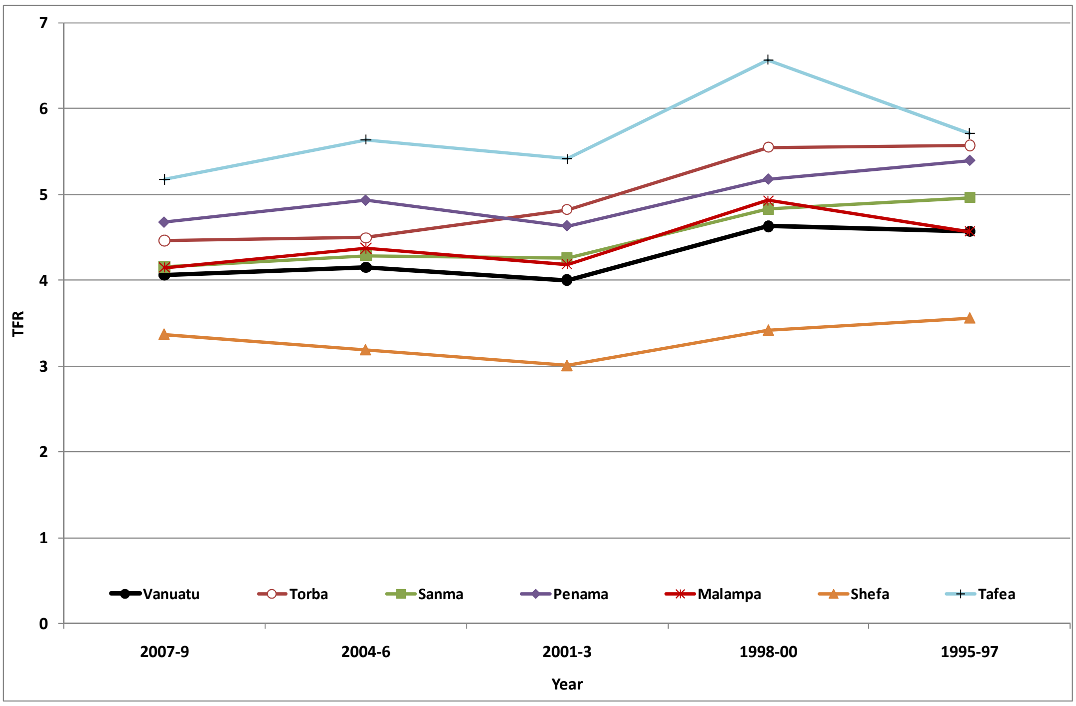
Furthermore, Figure 34 presents the adolescent (or teenage) fertility rate – the number of births per 1000 women aged 15-19. The rate was, with 40 much lower in the urban than the rural areas (77), and it is the highest in the province of Torba, where the teenage fertility is, with 116 births per 1000 women aged 15-19, very high.

Figure 32: Fertility trend by urban-rural residence, Vanuatu: 1995-2009



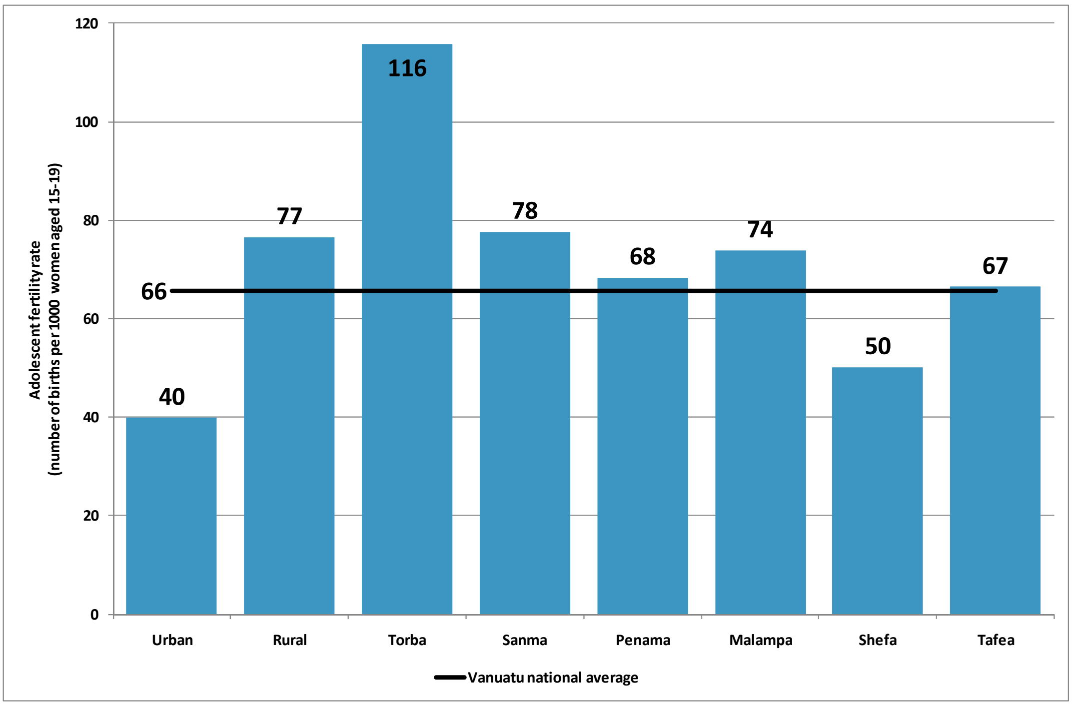
Source: Michael Levin, Harvard University Center for Population and Development Studies

Figure 33: Fertility trend by province, Vanuatu: 1995-2009



Source: Michael Levin, Harvard University Center for Population and Development Studies

Figure 34: Adolescent fertility rate (number of births per 1000 women aged 15-19 years), Vanuatu: 2007-2009



Source: Michael Levin, Harvard University Center for Population and Development Studies

3.1.3 Proximate determinants of fertility

This section does not attempt to provide a comprehensive analysis of variables that determine the level of fertility in Vanuatu. It merely touches on some aspects of it, mainly the educational levels of females. It hopefully encourages research into a more detailed analysis of the proximate determinates of Vanuatu's fertility levels and trends.

Comparing the fertility levels of women with the level of educational attainment shows a very straight forward and clear trend: the higher the level of women's education, the lower the number children per woman (Fig.35).

The importance of education is furthermore illustrated by plotting the data of TFR and literacy rates of women aged 15 years and older by place of residence (Fig.36). Literacy is measured as the proportion of the population who are able to read and write a simple sentence. The coefficient of determination (R^2) or correlation coefficient is with 0.914 very high, meaning that 91.4% of the variation of the two variables can be explained by the value of each variable: places with high literacy rate show a low TFR.

Equally high correlations were found when comparing the proportion of women without education and women with secondary education to data of women by fertility level. Data show that the higher the proportion of women without education, the higher the level of fertility, and vice versa: the higher the proportion of women with secondary education, the lower the level of fertility (Figs.37-38).

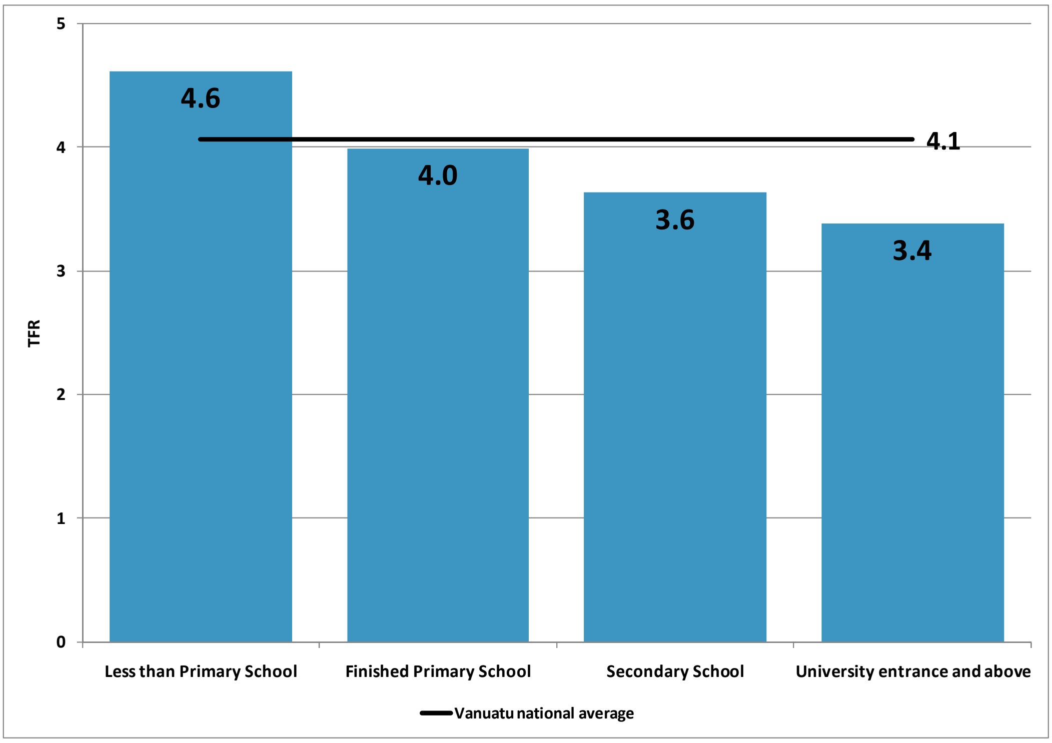
Figure 39 shows the correlation between the proportion of women employed (the female employment-population ratio) and fertility levels by place of residence. Data show that the higher the proportion of females employed, the lower the level of fertility.

Finally data also show a correlation between the levels of fertility and mortality (Figs.40-41).
There seems to be a positive correlation between the level of fertility (TFR), and the infant mortality rate (IMR): the higher the TFR, the higher the IMR.

Similarly is the correlation between the TFR and life expectancy at birth (e)) of females: the higher the average number of children per woman, (TFR), the shorter is a woman's life span (e0).

However, please note that other intermediate factors can influence the degree of correlation shown in the graphs such as the age structure of the population, age at marriage, traditional values, religious affiliation, labor market, access and availability of contraceptives and reproductive health services etc.

Figure 35: Fertility level (TFR) by educational attainment, Vanuatu: 2009



Source: Michael Levin, Harvard University Center for Population and Development Studies

Figure 36: Total fertility rate (TFR) and proportion of women aged 15 years and older literate by place of residence, Vanuatu: 2009

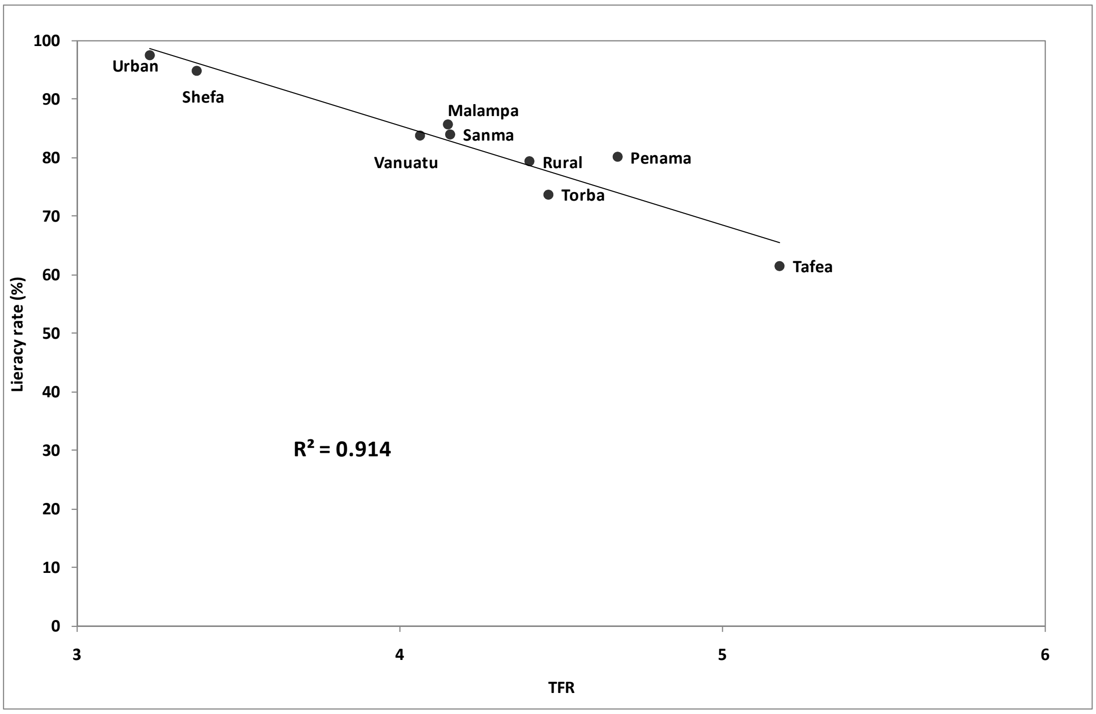


Figure 37: Total fertility rate (TFR) and proportion of women aged 15 years and older without education (never been to school) by place of residence, Vanuatu: 2009

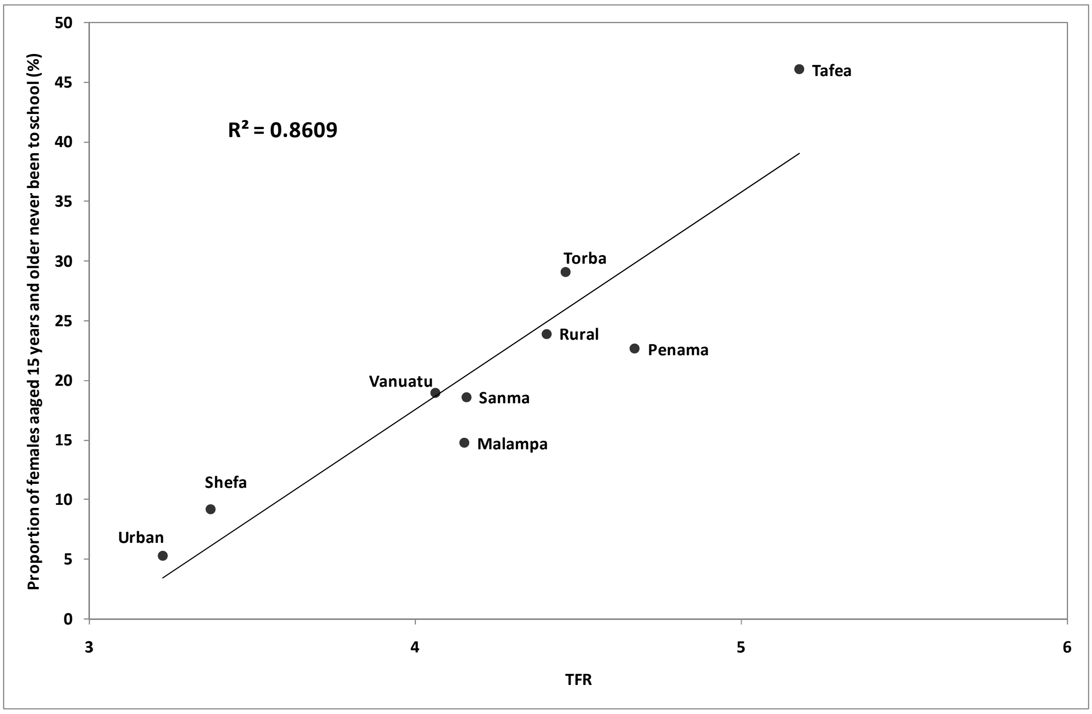


Figure 38: Total fertility rate (TFR) and proportion of women aged 15 years and older with secondary education by place of residence, Vanuatu: 2009

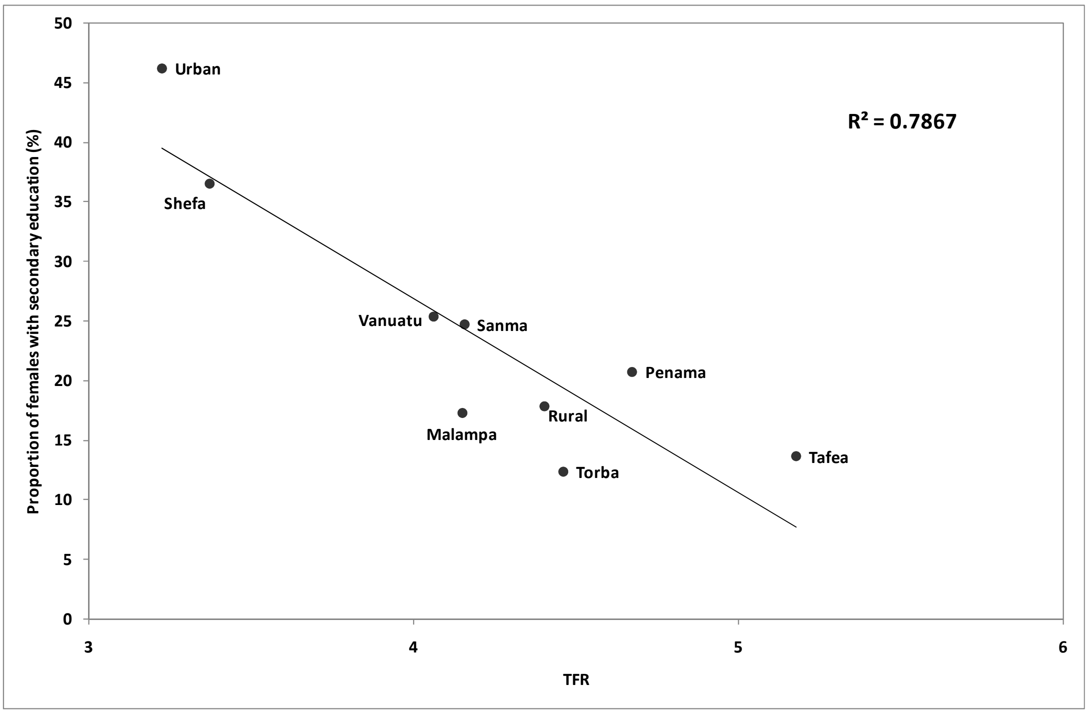


Figure 39: Total fertility rate (TFR) and female employment-population ratio by place of residence, Vanuatu: 2009

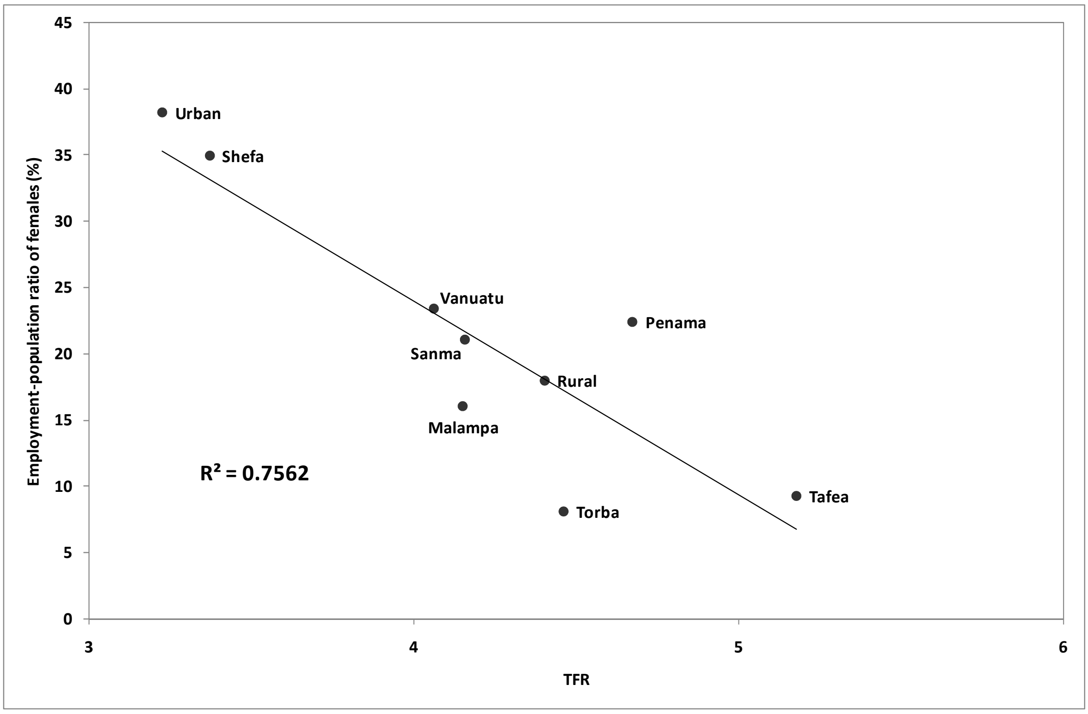


Figure 40: Total fertility rate (TFR) and Infant mortality rate (IMR) by place of residence, Vanuatu: 2009

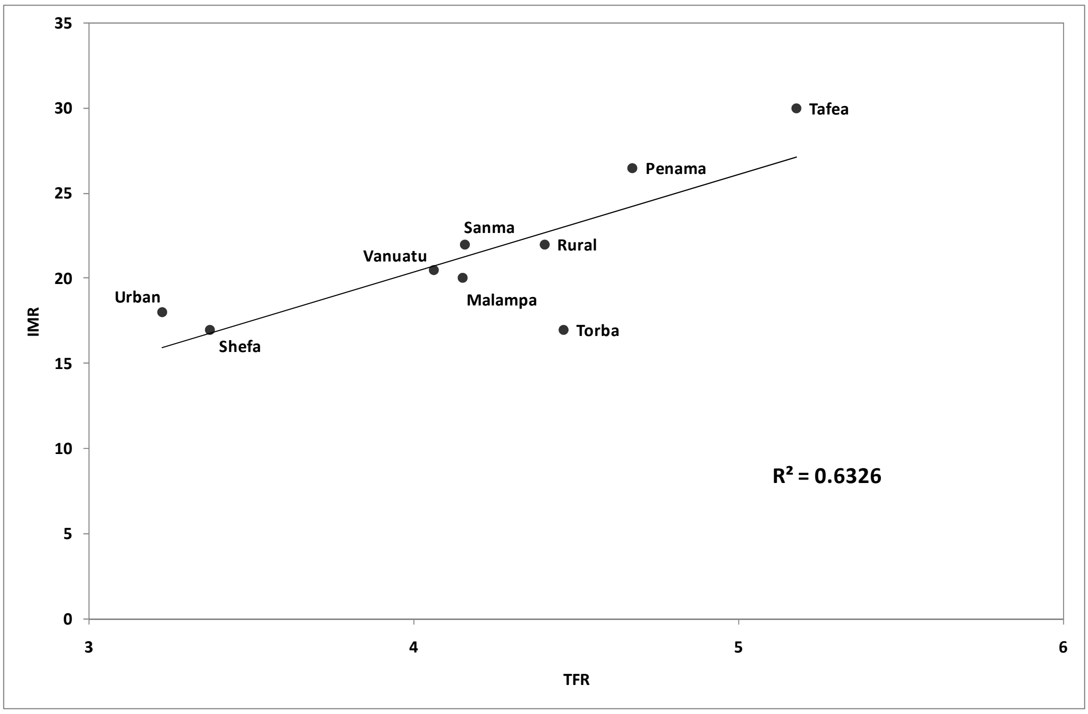
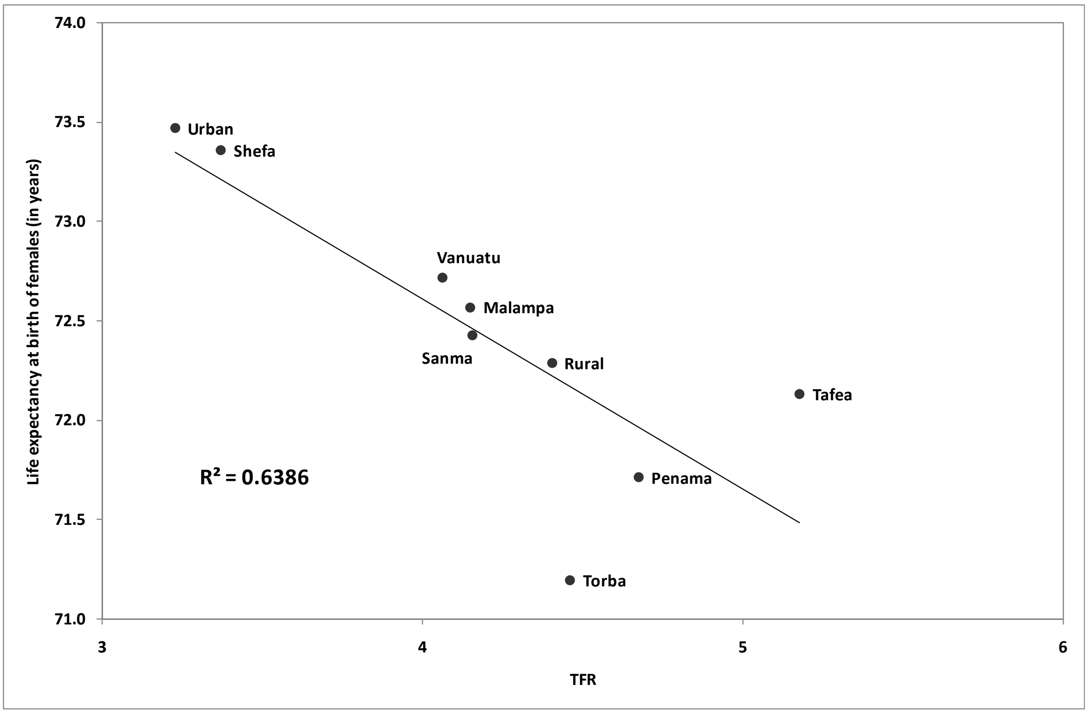


Figure 41: Total fertility rate (TFR) and life expectancy at birth of females by place of residence, Vanuatu: 2009



3.2 Mortality

The questions relating to mortality in the 2009 census were:

- how many live births a woman has ever had, and how many of those born were still alive and/or had died;
- whether a respondent's mother and father was still alive (orphanhood);
- whether a respondent's marital status was "widowed" (widowhood); and
- whether any residents of the household died during the last 12 months prior to the census.

3.2.1 National level estimates

Based on the reported number of deaths by age and sex derived from the household question on number of deaths of household residents who died during the last 12 months before the census, 998 persons had died during the year before the census; 624 males, and 374 females (Table 12).

Table 12: Number of deaths of household residents during the 12 months preceding the census by age and sex, Vanuatu: 2009

Age group	Total	Males	Females
0	258	152	106
1 - 4	65	42	23
5 - 9	24	13	11
10 - 14	19	13	6
15 - 19	20	10	10
20 - 24	31	22	9
25 - 29	21	11	10
30 - 34	23	10	13
35 - 39	29	19	10
40 - 44	37	21	16
45 - 49	40	28	12
50 - 54	52	34	18
55 - 59	58	42	16
60 - 64	64	40	24
65 - 69	54	35	19
70+	203	132	71
Total	**998**	**624**	**374**

Both the *Brass Growth Balance Equation Method*[7] and the *Preston-Coale Method*[8] were applied to the collected data, and it appears that the reported number of household deaths is significantly underreported. If these data were directly used to calculate a life table (by for example using the

[7] Population Analysis Spreadsheets (PAS), procedure GRBAL, US Census Bureau, Washington, USA
[8] Population Analysis Spreadsheets (PAS), procedure PRECOA, US Census Bureau, Washington, USA

PAS procedure LTPOPDTH) life expectancy at birth for males and females would calculate at 76.1 and 93.7 years, which is obviously much too high.

Interestingly the reported number of infant deaths (population younger than 1 year) seems considerably overstated, probably due to age misreporting, or coding errors. On the other hand, male and female IMRs would calculate at about 39 and 31 per 1000 for males and females, which seem too high.

However, the data on reported household deaths by age and sex was used to determine which of the different Coale-Demeny and United Nations model life tables compares best to the empirical Vanuatu mortality pattern using MORTPAK's procedure COMPAR. The assumption was made that possible under-registration of deaths is not age specific and therefore does not affect the overall pattern of mortality.

It was found that the *West* pattern of the Coale-Demeny model life tables resembles most closely the empirical mortality pattern of the Vanuatu population.

Early age mortality

From all children that were ever born to women aged 15 and older (189,333), 96.6% (182,885) were still alive, and 6,448 children had died (Table 13).

The proportion of surviving females was higher than that of males (Table 14). While 96.7% of all female children ever born were still alive, only 95.5% of all male children had survived.

The proportion of surviving children decreases with the age of mothers (Table 14 and Fig.42). While 98.2% of all children that were ever born to women now aged 20–24 were still alive, only 97.4% of children born to women now aged 45–49 were still alive, and only 88% of children born to women now aged 75 and older remained alive.

This general trend is explained by the fact that as the age of mothers increases, so does the age of her children; the proportion of birth cohorts that have died rises with an increase in the age of mothers.

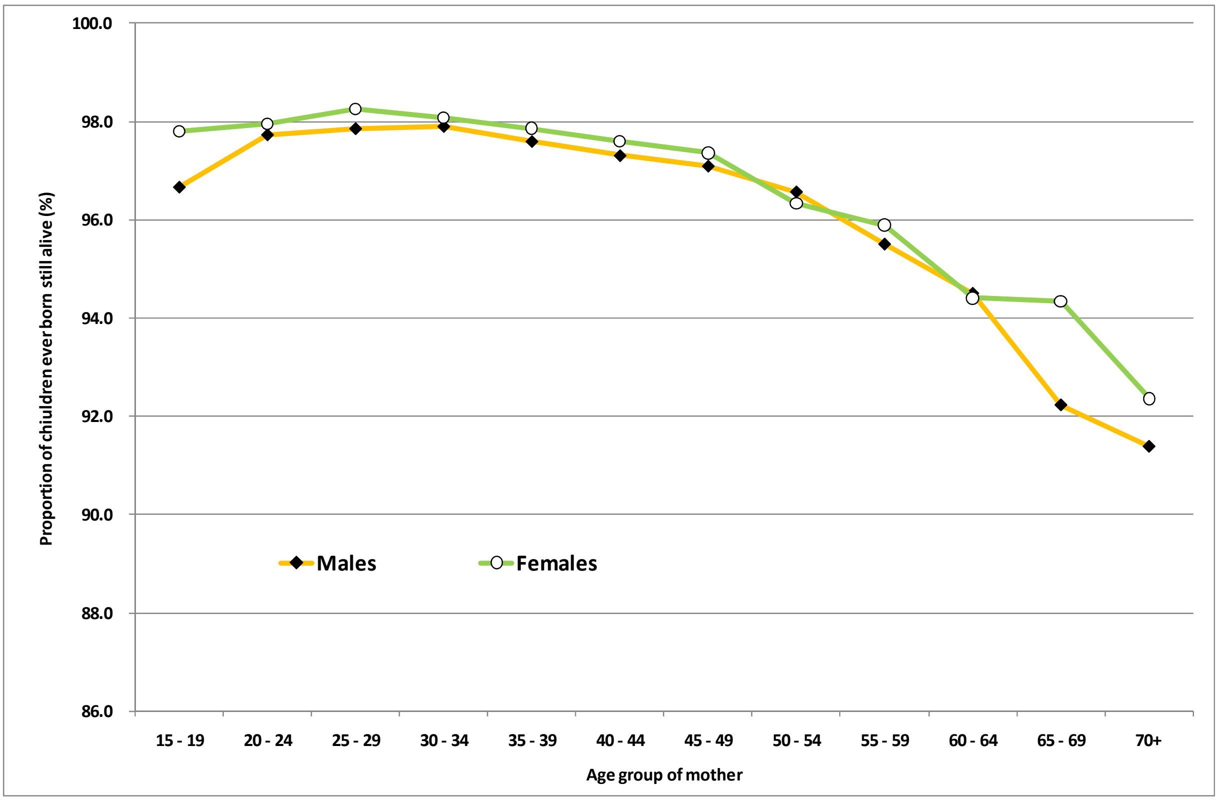
Table 13: Female population aged 15 and older by number of children ever born, number of children dead, and number of children still alive, Vanuatu: 2009

Age of women	Total number of women	Total number of children ever born alive			Total number of children dead			Total number of children still alive		
		Total	Males	Females	Total	Males	Females	Total	Males	Females
15 - 19	11,855	1,144	600	544	32	20	12	1,112	580	532
20 - 24	11,126	9,865	5,120	4,745	213	116	97	9,652	5,004	4,648
25 - 29	9,291	17,632	9,209	8,423	344	197	147	17,288	9,012	8,276
30 - 34	7,903	23,136	12,072	11,064	466	253	213	22,670	11,819	10,851
35 - 39	7,095	25,790	13,405	12,385	587	322	265	25,203	13,083	12,120
40 - 44	5,709	23,461	12,227	11,234	599	329	270	22,862	11,898	10,964
45 - 49	5,175	22,863	11,807	11,056	635	343	292	22,228	11,464	10,764
50 - 54	3,626	16,716	8,746	7,970	592	300	292	16,124	8,446	7,678
55 - 59	3,102	15,263	7,941	7,322	658	357	301	14,605	7,584	7,021
60 - 64	2,127	10,658	5,583	5,075	591	307	284	10,067	5,276	4,791
65 - 69	1,772	9,298	4,912	4,386	630	382	248	8,668	4,530	4,138
70+	2,705	13,507	7,016	6,491	1,101	605	496	12,406	6,411	5,995
Total	**71,486**	**189,333**	**98,638**	**90,695**	**6,448**	**3,531**	**2,917**	**182,885**	**95,107**	**87,778**

Table 14: Female population aged 15 and older by proportion of children ever born and still alive, and proportion now dead, Vanuatu: 2009

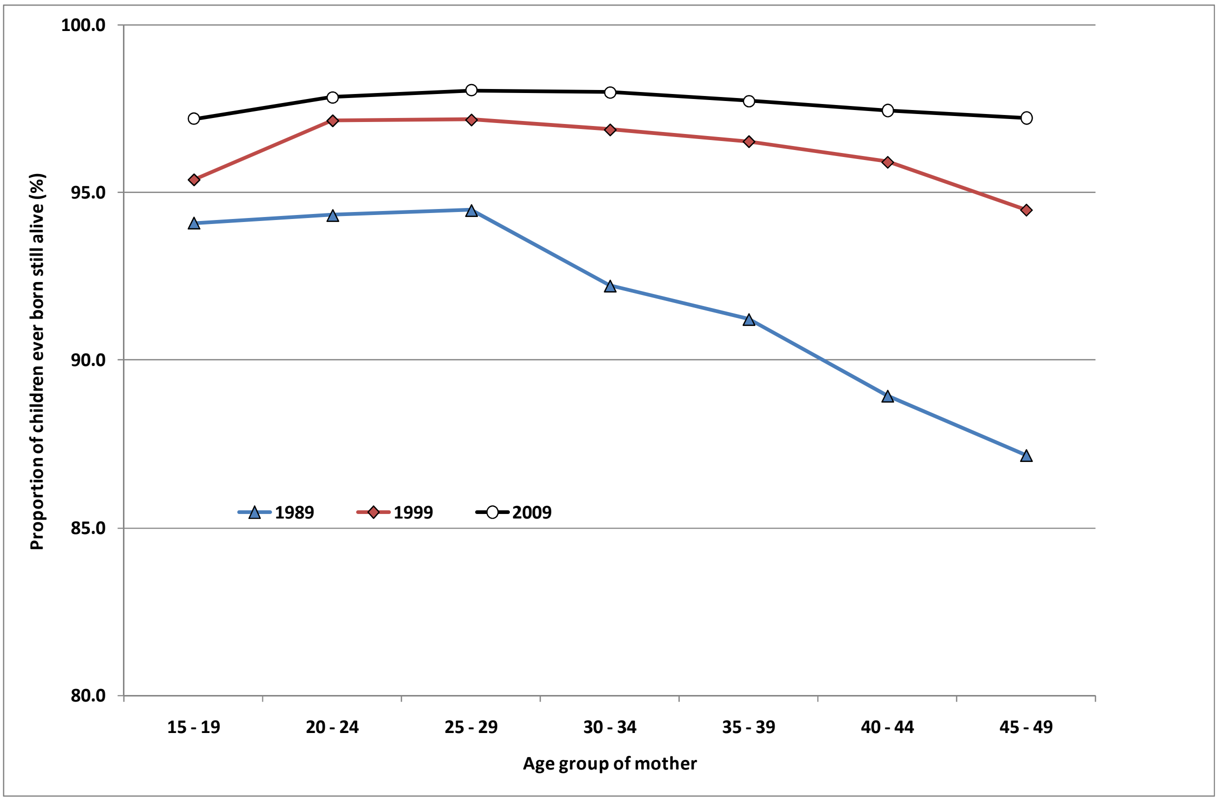
Age of women	Total number of women	Proportion of children ever born still alive (%)			Proportion of children ever born now dead (%)		
		Total	Males	Females	Total	Males	Females
15 - 19	11,855	97.2	96.7	97.8	2.8	3.3	2.2
20 - 24	11,126	97.8	97.7	98.0	2.2	2.3	2.0
25 - 29	9,291	98.0	97.9	98.3	2.0	2.1	1.7
30 - 34	7,903	98.0	97.9	98.1	2.0	2.1	1.9
35 - 39	7,095	97.7	97.6	97.9	2.3	2.4	2.1
40 - 44	5,709	97.4	97.3	97.6	2.6	2.7	2.4
45 - 49	5,175	97.2	97.1	97.4	2.8	2.9	2.6
50 - 54	3,626	96.5	96.6	96.3	3.5	3.4	3.7
55 - 59	3,102	95.7	95.5	95.9	4.3	4.5	4.1
60 - 64	2,127	94.5	94.5	94.4	5.5	5.5	5.6
65 - 69	1,772	93.2	92.2	94.3	6.8	7.8	5.7
70+	2,705	91.8	91.4	92.4	8.2	8.6	7.6
Total	**71,486**	**96.6**	**96.4**	**96.8**	**3.4**	**3.6**	**3.2**

Figure 42: Proportion of children ever born and still alive by age of mother, Vanuatu: 2009



A comparison of data on children ever born and still alive from the 1989, 1999 and 2009 census data (Fig.43) show continues improvements in the survival of children of women of all age groups. Especially the proportion of children of older women, who themselves are older children at the time of the respective censuses, have significantly increased, which points to a general improvement in the (child) mortality levels.

Figure 43: Proportion of children ever born and still alive by age of mother, Vanuatu: 1989, 1999 and 2009



Using the above census data on children ever born and children still living (by age group of mother), the following mortality indices have been obtained using the United Nations software package MORTPAK4.1, procedures CEBCS, and the assumption that the Coale-Demeny West model life tables resembles most closely the empirical mortality pattern of the Vanuatu population (see above).

Table 15: Child mortality indicators, Vanuatu: 2009

Indicator	1999			2009		
	Total	Males	Females	Total	Males	Females
Infant mortality rate (IMR)[1]	27	27	26	21	22	19
Child mortality rate (4q1)[2]	6	6	5	4	4	3
Under 5 mortality rate (q5)[3]	32	33	31	24	26	22

[1] = the number of deaths of children under one year of age per 1,000 live births
[2] = the probability of dying between age 1 and age 5 (per 1000)
[3] = the probability of dying between birth and age 5(per 1000)

IMR in 2009 was estimated at 22 and 19 for males and females, respectively, which is a significant improvement compared to 1999 when the IMR was estimated at 27 and 26 for males and females (Table 15).

Child mortality, the probability of dying between age 1 and age 5, was estimated at 4 male deaths and 3 female deaths per 1,000 people of that age in 2009.

Under 5 mortality, the probability of dying between birth and age 5, was estimated at 26 and 22 for males and females, respectively per 1,000 people in 2009.

Adult mortality

Adult mortality levels can be estimated from responses to the question

- whether a respondent's mother or father was still alive (orphanhood), and
- whether a respondent's marital status was "widowed" (widowhood).

Orphanhood

From Table 17 and Figure 44 it can be seen that the number and proportion of respondent's mother still alive is higher than that of fathers. There are 2 explanations for it:

1. females (mothers) usually live longer lives than males (fathers); and
2. fathers are usually older than mothers, because of their age difference at marriage. In chapter 4, section on marital status, it was calculated that the average age at marriage (SMAM) is about 25.5 and 22.5 years for males and females respectively; an age difference of 3 years between spouses.

The data on orphanhood were used to calculate adult mortality rates, specifically the life expectancy at age 20 (Table 16). The software package MORTPAK, procedure ORPHAN, was used to calculate the adult mortality rates. Please note that the *mean age at childbearing (MAC)*, a required data input for this method, was calculated from the adjusted ASFR produced by the own-children method. The MAC-value for males was adjusted by the age difference of the calculated *SMAMs*.

Table 16: Life expectancy at age 20, using the orphanhood method, MORTPAK's procedure ORPHAN, Vanuatu: 2009

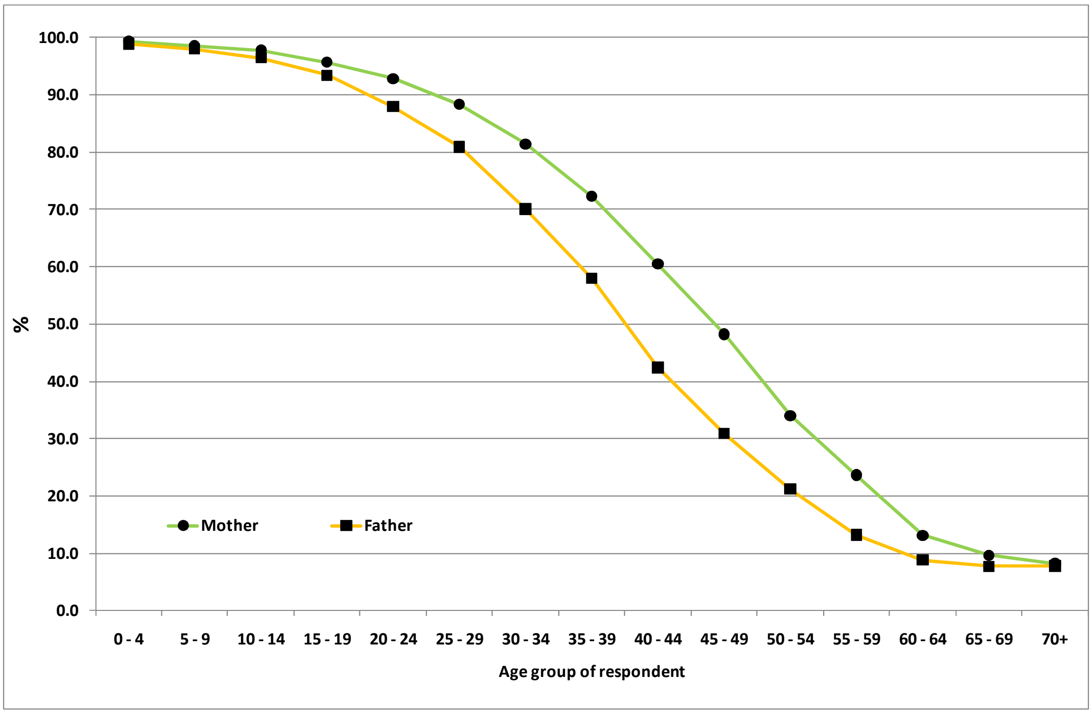
	Males	Females	Total
Life expectancy at age 20 (e20)	52.1	54.7	53.4

Table 17: Population* by 5 year age group and whether biological father or mother is still alive, Vanuatu: 2009

Age group	Number of respondents	Father still alive		Mother still alive	
		Yes	No	Yes	No
0 - 4	33,083	32,725	358	32,867	216
5 - 9	29,476	28,900	576	29,037	439
10 - 14	26,682	25,744	938	26,100	582
15 - 19	21,734	20,310	1,424	20,803	931
20 - 24	21,229	18,676	2,553	19,707	1,522
25 - 29	18,245	14,768	3,477	16,113	2,132
30 - 34	15,586	10,927	4,659	12,695	2,891
35 - 39	14,016	8,126	5,890	10,132	3,884
40 - 44	11,423	4,845	6,578	6,907	4,516
45 - 49	10,144	3,130	7,014	4,893	5,251
50 - 54	7,245	1,535	5,710	2,464	4,781
55 - 59	6,314	834	5,480	1,493	4,821
60 - 64	4,284	378	3,906	564	3,720
65 - 69	3,790	292	3,498	367	3,423
70+	5,632	439	5,193	460	5,172
Total	**228,883**	**171,629**	**57,254**	**184,602**	**44,281**

*refers to population living in private households only

Figure 44: Proportion of respondent's father or mother still alive, Vanuatu: 2009



Widowhood

From Table 18 and Figure 45 it can be seen that the number and proportion of females widowed is higher than that of males. There are 2 explanations for it:

1. females usually live longer lives than males (her spouse); and
2. males are usually older than females, because of their age difference at marriage, as described above (orphanhood).

An attempt was made to use the data on widowhood to calculate adult mortality rates, specifically the life expectancy at age 20, by applying the software package MORTPAK, procedure WIDOW. Unfortunately, the data do not allow the calculation of female values, because the proportion of male widowers is too small to calculate any reasonable indicators.

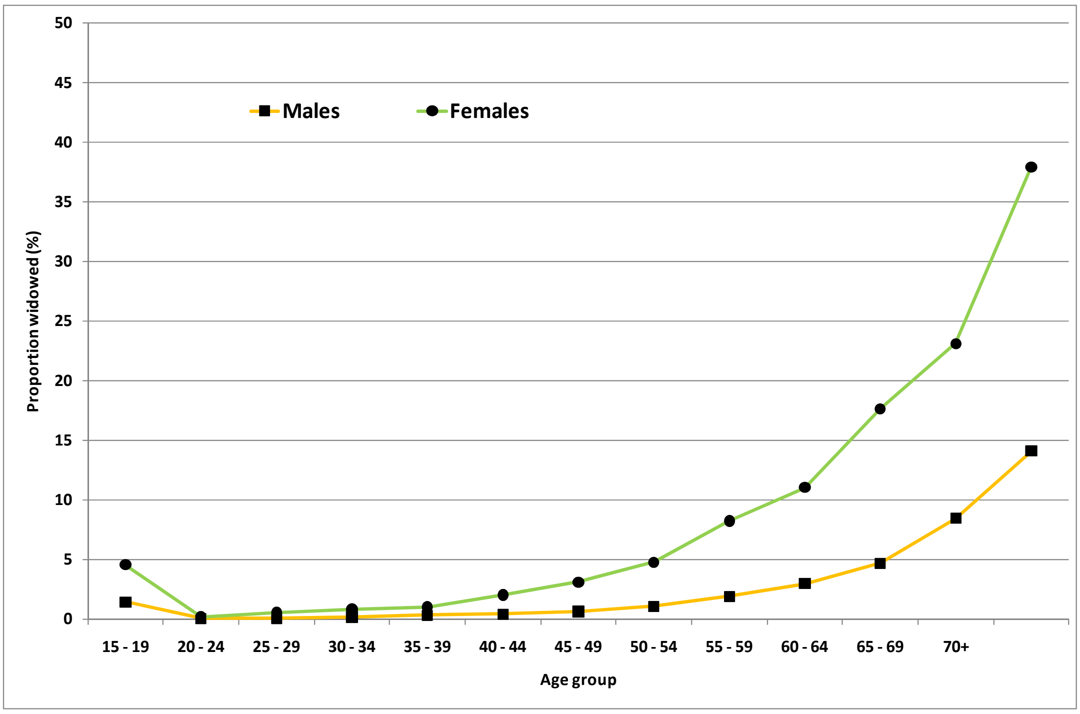
There are 2 explanations for this:

1. males did incorrectly state their marital status; and
2. a high proportion of males who lost their spouse remarried, and although widowed once, is tabulated as 'married'.

Table 18: Population 15 years and older by sex and widowed, Vanuatu: 2009

Age group	Total			Widowed		
	Total	Males	Females	Total	Males	Females
15 - 19	23,882	12,027	11,855	22	3	19
20 - 24	21,541	10,415	11,126	63	6	57
25 - 29	18,415	9,124	9,291	85	13	72
30 - 34	15,693	7,790	7,903	99	22	77
35 - 39	14,171	7,076	7,095	170	28	142
40 - 44	11,523	5,814	5,709	210	35	175
45 - 49	10,241	5,066	5,175	297	52	245
50 - 54	7,415	3,789	3,626	368	71	297
55 - 59	6,363	3,261	3,102	438	96	342
60 - 64	4,319	2,192	2,127	477	102	375
65 - 69	3,826	2,054	1,772	582	173	409
70+	5,661	2,956	2,705	1,442	416	1,026
Total	**143,050**	**71,564**	**71,486**	**4,253**	**1,017**	**3,236**

Figure 45: Proportion of population 15 years and older by sex and widowed, Vanuatu: 2009



Nevertheless, the data on marital status (widowhood) provides interesting and valuable insights into mortality differentials between males and females, as the large difference in widowed males and females points to lower mortality rates (higher life expectancies) for females than males.

However, since the widowhood method cannot be applied to both males and females, it was decided to rely on the orphanhood method to calculate consistent data for males and females, i.e. using the same method for both sexes.

Complete life table

In order to construct a complete life table for males and females, the estimated child and adult mortality indicators need to be combined (Table 19). As mentioned above, it was decided to use the adult mortality indicators produced by the orphanhood method as the final adult mortality estimates together with the child mortality estimates as presented above.

Once again, the UN software package MORTPAK, procedure COMBIN, was used to calculate a complete life table for males and females. The following inputs were used:

Table 19: Child and adult mortality indicators used to calculate complete life table, Vanuatu: 2009

Indicators	Males	Females
Infant mortality rate (q0)	22	19
Child mortality(1q4)	4	3
l(1)	97800	98100
l(5)	97409	97806
E(20)	52.1	54.7

l (1) = The probability of surviving to age 1 (times 100,000) in the population under study = 100000 * [1 – q(0)]

l(5) = The probability of surviving to age 5 (times 100,000) in the population under study = 100000 * [1 – q(0)] * [1 – 1q4)]

Tables 20 and 21 show the complete life tables for males and females. The life expectancies at birth of 69.6 and 72.7 years for males and females is an improvement compared to those calculated based on the 1999 census, when life expectancies at birth were only 65.6 and 69.0 for males and females respectively.

Life tables for males and females for each province are presented in Apps. 8-19.

Table 20: Abridged life table for Vanuatu males: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0224	**0.0220**	100,000	2,200	98,033	0.9766	6,958,969	**69.6**
1	0.0010	**0.0040**	**97,800**	391	390,256	0.9958	6,860,936	70.2
5	0.0006	0.0032	**97,409**	315	486,257	0.9970	6,470,680	66.4
10	0.0006	0.0028	97,094	269	484,796	0.9961	5,984,423	61.6
15	0.0011	0.0055	96,825	534	482,893	0.9935	5,499,627	56.8
20	0.0014	0.0072	96,291	689	479,768	0.9928	5,016,734	**52.1**
25	0.0014	0.0072	95,602	687	476,309	0.9924	4,536,966	47.5
30	0.0016	0.0081	94,915	770	472,709	0.9909	4,060,656	42.8
35	0.0021	0.0105	94,145	987	468,389	0.9873	3,587,947	38.1
40	0.0031	0.0155	93,158	1,448	462,428	0.9801	3,119,559	33.5
45	0.0051	0.0251	91,710	2,303	453,232	0.9679	2,657,130	29.0
50	0.0082	0.0403	89,407	3,603	438,697	0.9482	2,203,898	24.7
55	0.0134	0.0652	85,804	5,594	415,992	0.9180	1,765,201	20.6
60	0.0213	0.1015	80,210	8,144	381,900	0.8732	1,349,209	16.8
65	0.0339	0.1569	72,067	11,309	333,472	0.8050	967,309	13.4
70	0.0545	0.2407	60,758	14,627	268,450	0.7058	633,837	10.4
75	0.0875	0.3594	46,131	16,577	189,464	0.4815	365,387	7.9
80	0.1680	...	29,554	29,554	175,923	...	175,923	6.0

Note: Highlighted are the input values as displayed in Table 15, as well as the life expectancy at birth (e0)

Table 21: Abridged life table for Vanuatu females: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0193	**0.0190**	100,000	1,900	98,285	0.9800	7,271,729	**72.7**
1	0.0008	**0.0030**	**98,100**	294	391,693	0.9972	7,173,444	73.1
5	0.0003	0.0017	**97,806**	165	488,618	0.9984	6,781,751	69.3
10	0.0003	0.0014	97,641	140	487,857	0.9980	6,293,133	64.5
15	0.0006	0.0028	97,501	273	486,884	0.9965	5,805,275	59.5
20	0.0008	0.0040	97,229	391	485,193	0.9960	5,318,392	**54.7**
25	0.0008	0.0039	96,838	377	483,253	0.9959	4,833,199	49.9
30	0.0009	0.0044	96,461	423	481,282	0.9950	4,349,946	45.1
35	0.0012	0.0058	96,038	561	478,875	0.9926	3,868,664	40.3
40	0.0019	0.0093	95,477	890	475,353	0.9874	3,389,789	35.5
45	0.0034	0.0167	94,587	1,582	469,346	0.9777	2,914,436	30.8
50	0.0059	0.0289	93,005	2,691	458,896	0.9611	2,445,090	26.3
55	0.0104	0.0507	90,314	4,575	441,052	0.9348	1,986,195	22.0
60	0.0171	0.0822	85,739	7,046	412,302	0.8948	1,545,143	18.0
65	0.0283	0.1328	78,693	10,452	368,920	0.8314	1,132,840	14.4
70	0.0470	0.2114	68,240	14,428	306,737	0.7373	763,920	11.2
75	0.0774	0.3251	53,812	17,496	226,163	0.5053	457,183	8.5
80	0.1572	...	36,316	36,316	231,020	...	231,020	6.4

Note: Highlighted are the input values as displayed in Table 15, as well as the life expectancy at birth (e0)

Brief explanation of a life table (Tables 20 and 21)

A life table is used to simulate the lifetime mortality experience of a population. It does so by taking that population's age-specific death rates and applying them to a hypothetical population of 100,000 people born at the same time. For each year on the life table, death inevitably thins the hypothetical population's ranks until, in the bottom row of statistics, even the oldest people die.

Column "m(x,n)" shows the proportion of each age group dying in each age interval. These data are based on the observed mortality experience of a population. Column "l(x)" shows the number of people alive at the beginning of each age interval, starting with 100,000 at birth. Column "d(x,n)" shows the number who would die within each age interval. Column "L(x,n)" shows the total number of person-years that would be lived within each age interval. Column "T(x)" shows the total number of years of life to be shared by the population in the age interval and in all subsequent intervals. This measure takes into account the frequency of deaths that will occur in this and all subsequent intervals. As age increases and the population shrinks, the total person-years that the survivors have to live necessarily diminish.

Life expectancy is shown in Column "e(x)" — the average number of years remaining for a person at a given age interval.

The first value in column **"e(x)"** represents **life expectancy at birth**.
The first value in column **"q(x,n)"** is an approximation of the **infant mortality rate (IMR)**.
The second value in column **"q(x,n)"** is an approximation of the **child mortality rate**.

m(x,n) = age-specific death rate
q(x,n) = the probability of dying between two exact ages
l(x) = the number of survivors at exact age x
d(x,n) = the number of deaths between two exact ages, x and x+n
L(x,n) = the number of person-years that would be lived within the indicated age interval (x and x+n) by the cohort of 100,000 births assumed.
S(x,n) = probability of surviving between two exact ages, x and x+n
T(x) = total number of person-years that would be lived after the beginning of the indicated age interval by the cohort of 100,000 births assumed.
e(x) = expectation of life from age x

Finally the annual number of deaths by age and sex can be calculated by multiplying the age-specific-death rates – the m(x) values in column 2 of tables – by the male and female population size of each respective age group. The results are displayed in Table 22.

Table 22: Estimated number of deaths, and crude death rates (CDR) based on life table's age-specific-death rates [m(x)] and enumerated population size, Vanuatu: 2009

Age group	Population size			m(x,n)		Estimated number of deaths		
	Males	Females	Total	Males	Females	Males	Females	Total
0	3,731	3,374	7,105	0.0224	0.0193	84	65	149
1 - 4	13,579	12,683	26,262	0.0010	0.0008	14	10	23
5 - 9	15,455	14,230	29,685	0.0006	0.0003	10	5	15
10 - 14	14,762	13,159	27,921	0.0006	0.0003	8	4	12
15 - 19	12,027	11,855	23,882	0.0011	0.0006	13	7	20
20 - 24	10,415	11,126	21,541	0.0014	0.0008	15	9	24
25 - 29	9,124	9,291	18,415	0.0014	0.0008	13	7	20
30 - 34	7,790	7,903	15,693	0.0016	0.0009	13	7	20
35 - 39	7,076	7,095	14,171	0.0021	0.0012	15	8	23
40 - 44	5,814	5,709	11,523	0.0031	0.0019	18	11	29
45 - 49	5,066	5,175	10,241	0.0051	0.0034	26	17	43
50 - 54	3,789	3,626	7,415	0.0082	0.0059	31	21	52
55 - 59	3,261	3,102	6,363	0.0134	0.0104	44	32	76
60 - 64	2,192	2,127	4,319	0.0213	0.0171	47	36	83
65 - 69	2,054	1,772	3,826	0.0339	0.0283	70	50	120
70 - 74	1,085	983	2,068	0.0545	0.0470	59	46	105
75 - 79	941	799	1,740	0.0875	0.0774	82	62	144
80+	930	923	1,853	0.1680	0.1572	156	145	301
Total	**119,091**	**114,932**	**234,023**			**718**	**543**	**1,260**
CDR*						**6.0**	**4.7**	**5.4**

CDR: crude death rate

The crude death rate (CDR) is calculated as follows:

CDR = 1,260 / 234,023 x 1,000 = **5.4** (5 deaths per 1,000 population in 2009)

Table 23: General mortality indicators, Vanuatu: 2009

Indicator	Males	Females	Total
Life expectancy at birth, E(0)	69.6	72.7	71.1
Crude death rate (CDR)	6.0	4.7	5.4

The above mortality indicators clearly show more positive mortality indicators for females than for males, with females living longer, on average about three years longer, than males (Table 23). The findings are supported by the following data:

- the proportion of surviving female children was higher than males (Fig.42);
- more mothers than fathers survive to older ages (Fig.44); and
- the proportion of widowed females was considerably higher than that of widowed males (Fig.45), indicating earlier death of male spouses.

3.2.2 Sub national estimates

This section contains some mortality estimates by urban-rural distinction, and by province. All estimates are based on results derived through application of the same data and methodology as those used deriving the national estimates (data on children ever born and still alive, and on orphanhood – father/mother still alive).

A general observation is that all mortality indicators show better values in the urban than the rural areas, and that females are in general better off than males, although there are some exceptions to the general trend which is shown below.

The summary of main indicators in front of the report summarizes various mortality indicators by sex and place of residence, and figures show the results visually.

Children of mothers living in urban areas and/or the province of Shefa have a higher probability of survival than children of women living in rural areas (Fig.46). Compared to the national average, children of mothers living in Torba or Tafea had the lowest probability of survival. A higher proportion of female children ever born have survived than male children.

Of the population aged 60 years and older, almost 3 times more females (27.4%) were widowed than males (9.6%). The proportion males and females 60 years and older who are widowed was the highest in the province of Torba followed by Penama (Fig. 47). The proportions widowed were considerably higher in the rural than the urban areas. However, when interpreting the results it needs to be mentioned that males are usually older than their spouses, in Vanuatu by about 3 years.

Figure 48 shows the proportions of the population orphaned, which means that either their biological father or mother had died. On average a quarter of the population responded that their father had died, compared to 19% of their mothers. Clearly mothers survive to older ages than fathers. However, as mentioned before, fathers are usually older than mothers, because of their age difference at marriage. In general, the proportion of the population orphaned was higher in the rural than urban areas, and it was particularly high in Penama and Malampa.

Fortunately one of the most important mortality indicators, the infant mortality rate (IMR) has decreased since the last census in 1999, and stands at 22 and 19 infant deaths per 1000 live births for males and females respectively (Fig.49). In general the IMR of males is higher than that of females, with the exceptions of the provinces Torba, Penama, and Tafea. These are also the provinces with the highest IMR in general. Infant mortality rates are significantly lower in the urban than the rural areas. One likely important factor is the better accessibility of (reproductive) health services.

Figures 50 and 51 show the life expectancies at age 20 (e20) and life expectancy at birth (e0). The pattern of both indicators is very similar. In general females live on average 3 years longer than males. Life expectancies in the rural areas are considerably lower than in the urban areas, where the difference between male and female life expectancies is much lower than in the rural areas. The lowest life expectancies were calculated for Penama and Torba.

Life tables for males and females for each province are presented in Apps.8-19.

Figure 46: Proportion of children ever born and still alive by sex and place of residence, Vanuatu: 2009

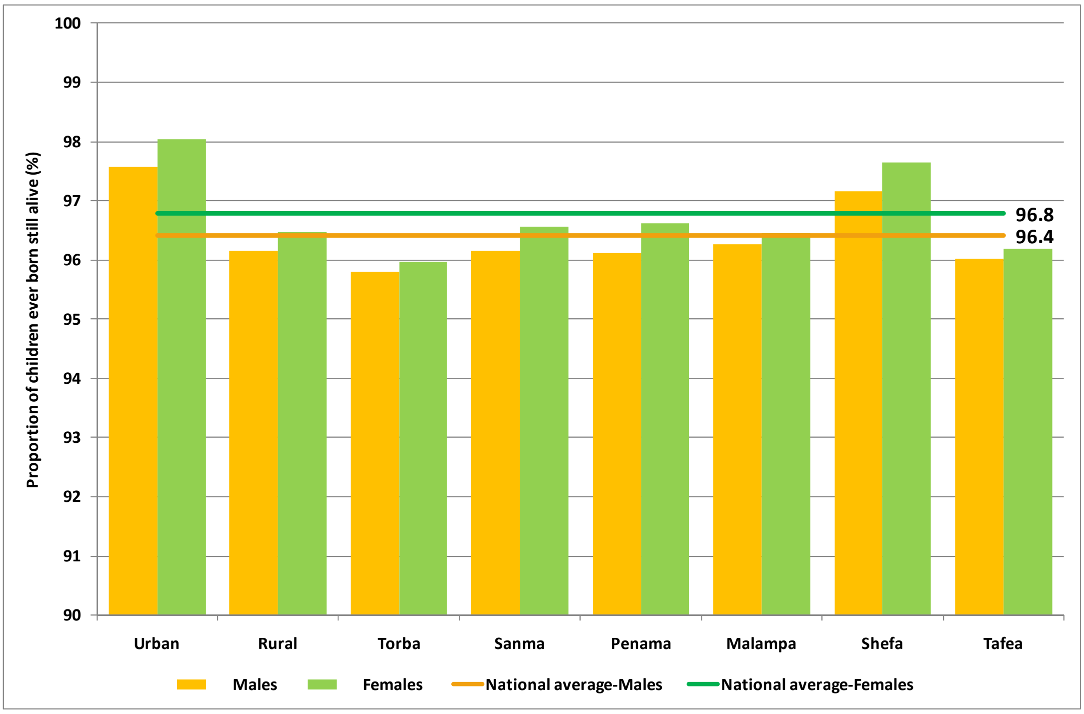


Figure 47: Proportion of population 60 years and older widowed by sex and place of residence, Vanuatu: 2009

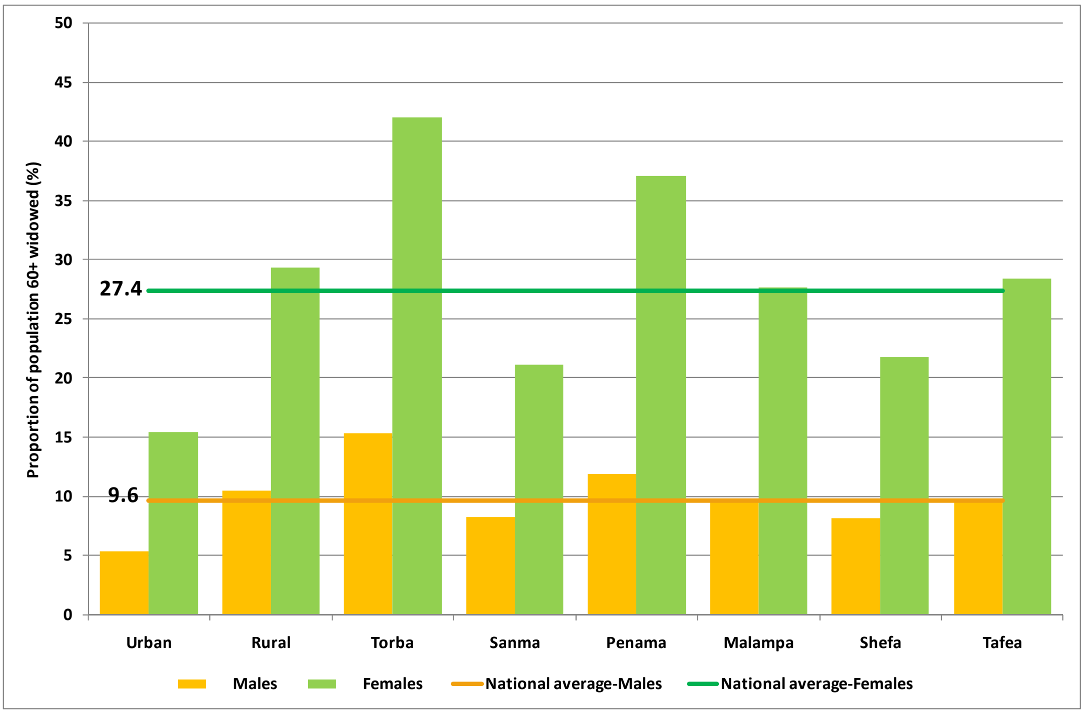


Figure 48: Proportion of population with father or mother dead (orphaned) by place of residence, Vanuatu: 2009

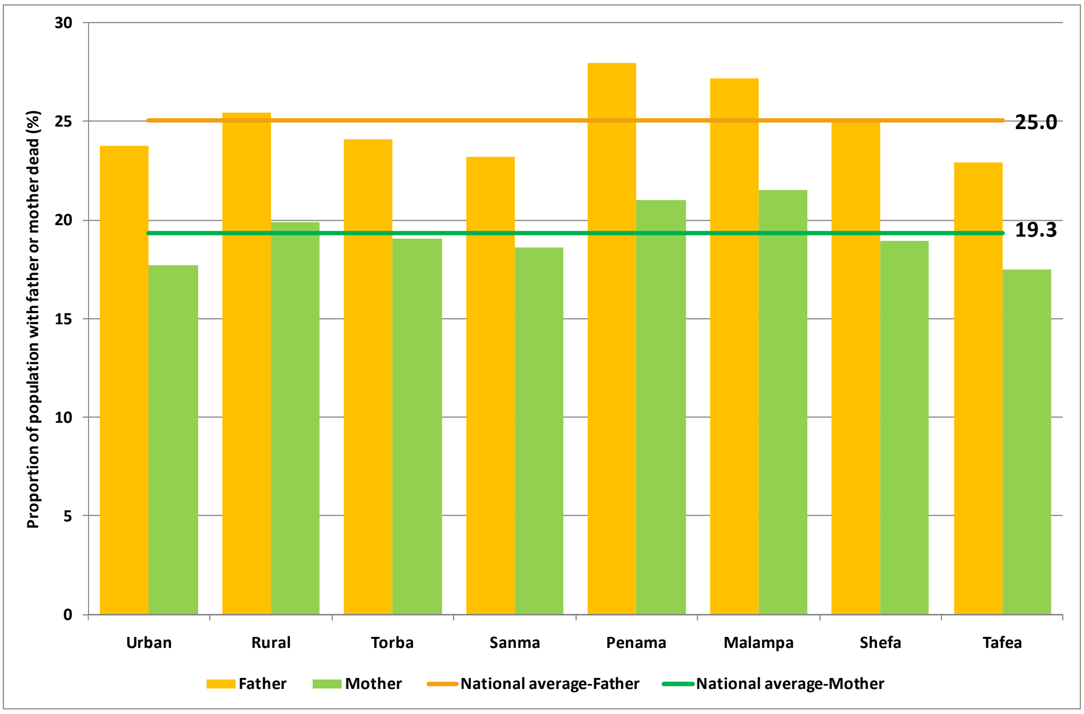


Figure 49: Infant mortality rate (IMR) by sex and place of residence, Vanuatu: 2009

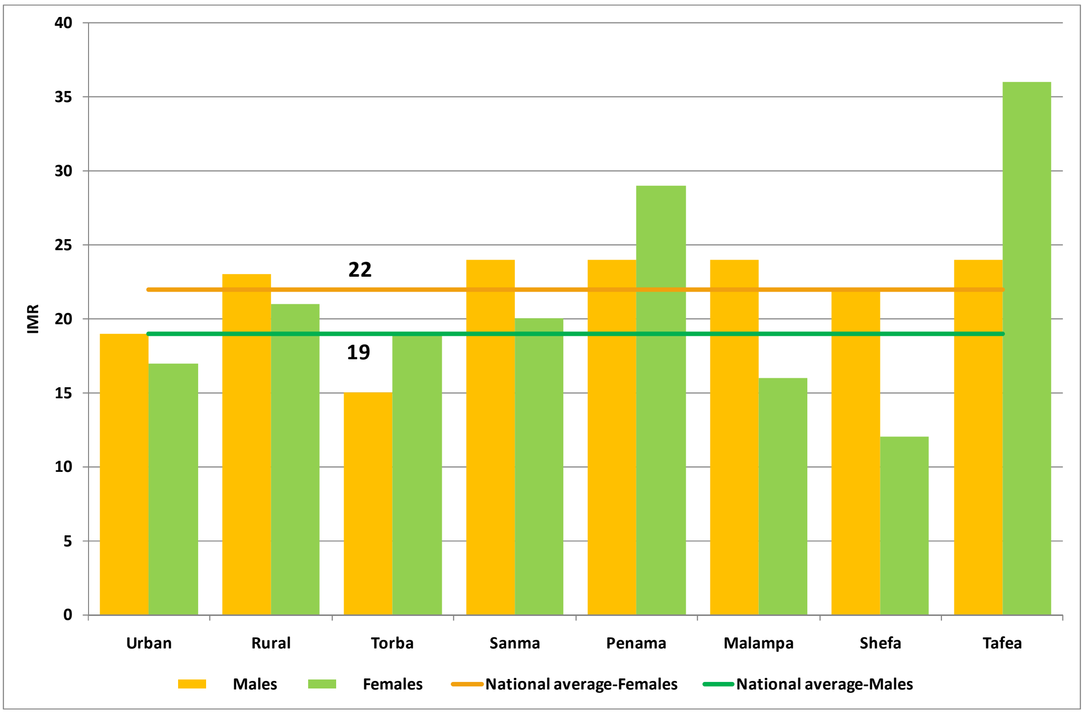


Figure 50: Life expectancy at age 20 (e20) by sex and place of residence, Vanuatu: 2009

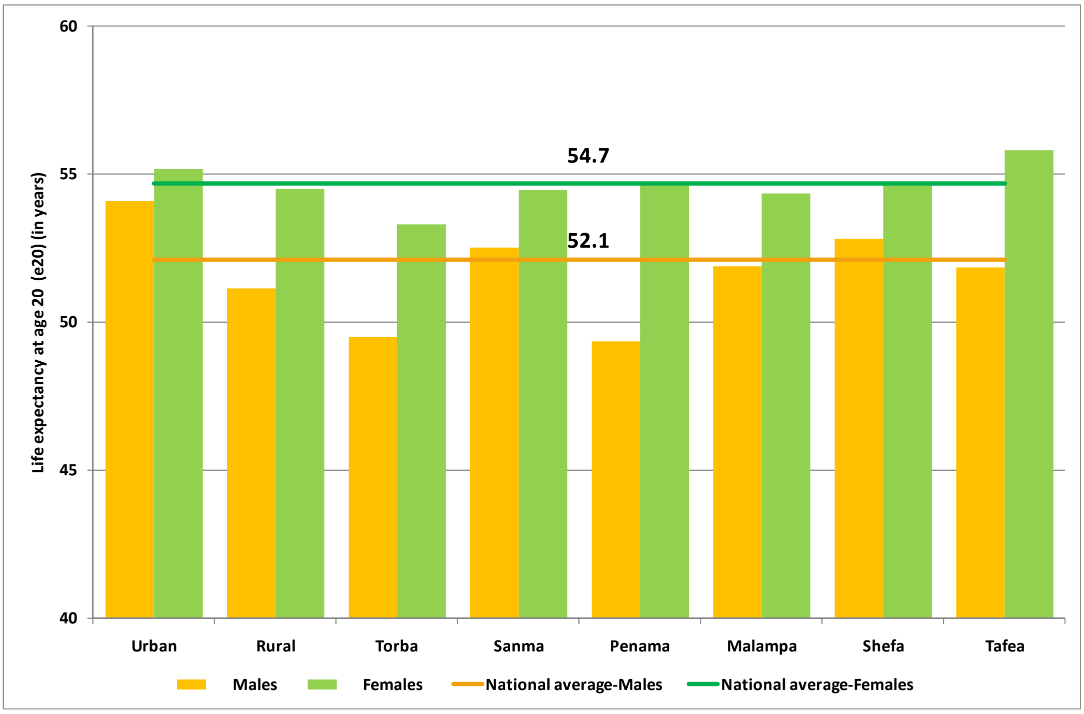
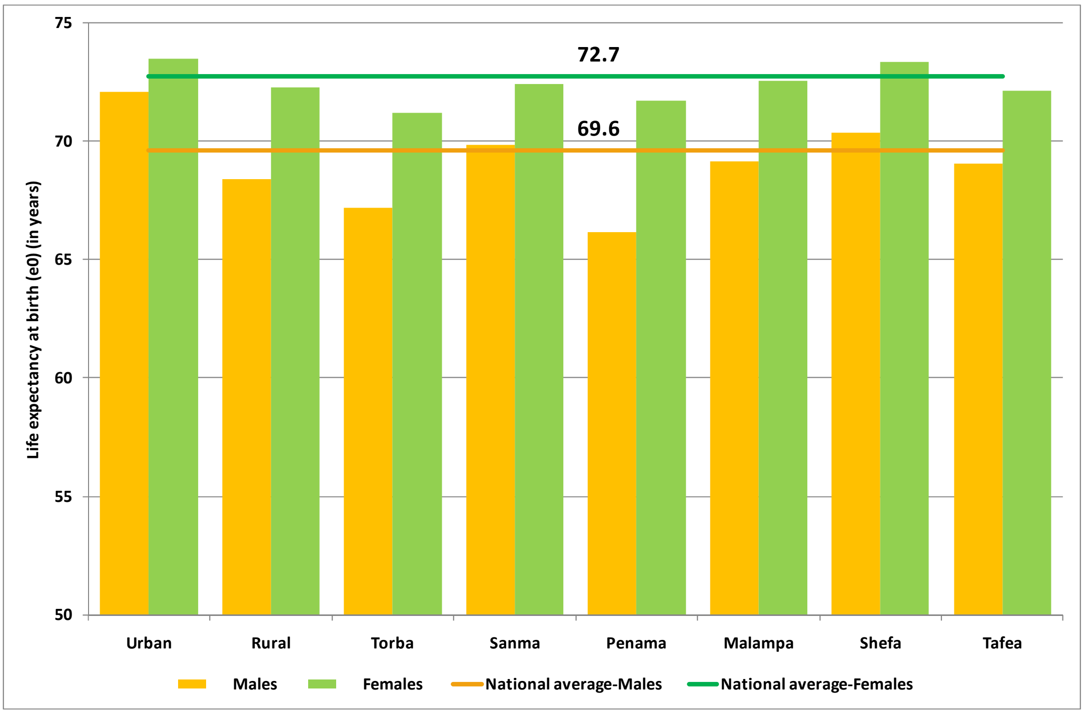


Figure 51: Life expectancy at birth (e0) by sex and place of residence, Vanuatu: 2009



3.2.3 Proximate determinants of mortality

This section does not attempt to provide a comprehensive analysis of variables that determine the level of mortality in Vanuatu. It merely provides some observations of possible correlations of variables, and hopefully entices research into a more detailed analysis of factors that determine Vanuatu's mortality levels and trends.

The interdependency between the levels of fertility and mortality has been shown in the previous section on fertility (Figs.40-41). Both graphs show that there is a correlation between the level of fertility and mortality: the higher the level of fertility, the higher the level of mortality.

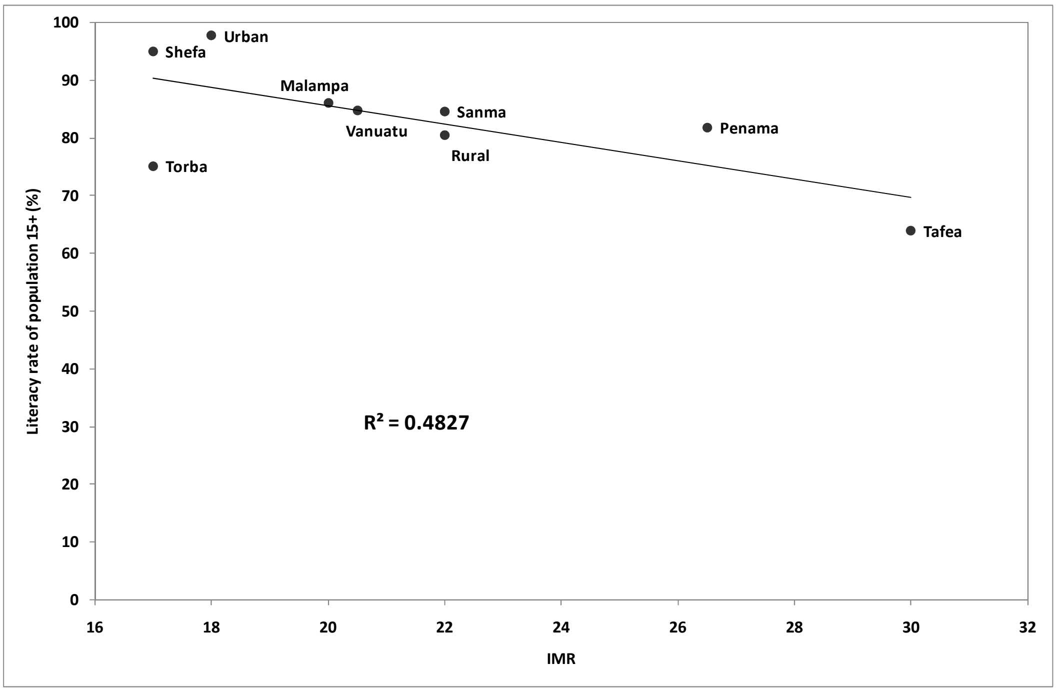
Again, the importance of education is highlighted in figures where the correlation between the IMR and life expectancy at birth with various educational indicators is illustrated.

The data seem to indicate the following correlations:

- the higher the literacy rate, the lower is the IMR (Fig.52), and the higher is the life expectancy at birth (Fig.53);
- the higher the proportion of the population that has never been to school, the higher the IMR (Fig.54); and
- the higher the proportion of the population with secondary education, the higher the life expectancy at birth (Fig.55).

However, please note that other intermediate factors can influence the degree of correlation shown in the graphs such as the age structure of the population, environmental factors, access and availability of quality health services etc.

Figure 52: Infant mortality rate (IMR) and literacy rate of population aged 15 years and older (%) by place of residence, Vanuatu: 2009



Note: R^2 is 0.84 if the outlier Torba is omitted

Figure 53: Life expectancy at birth (e0) and literacy rate of population aged 15 years and older (%) by place of residence, Vanuatu: 2009

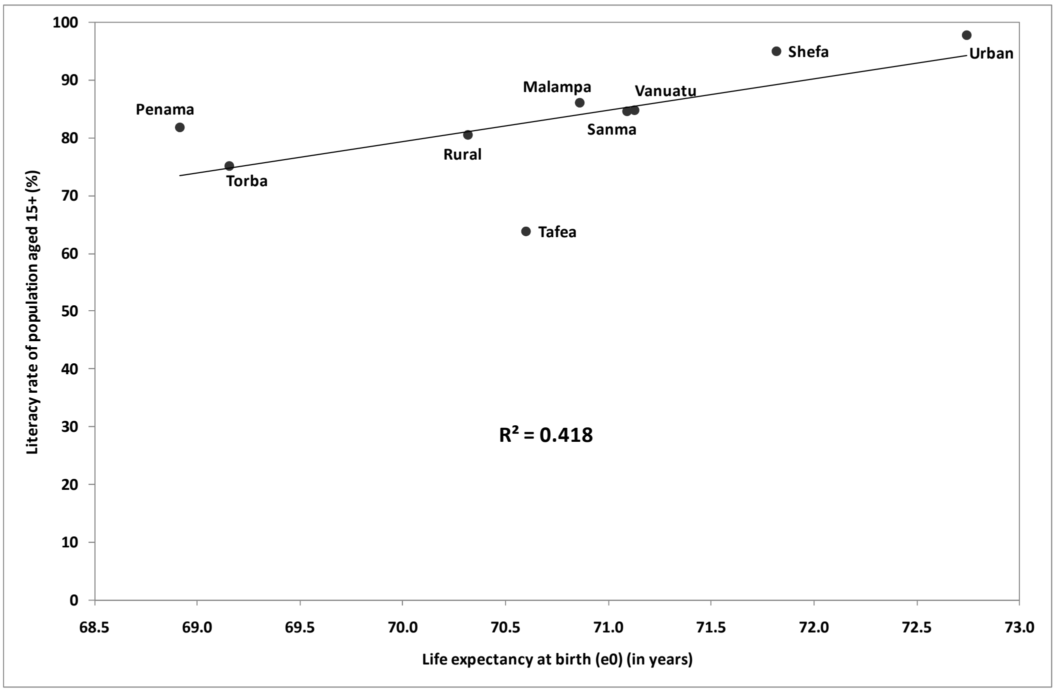
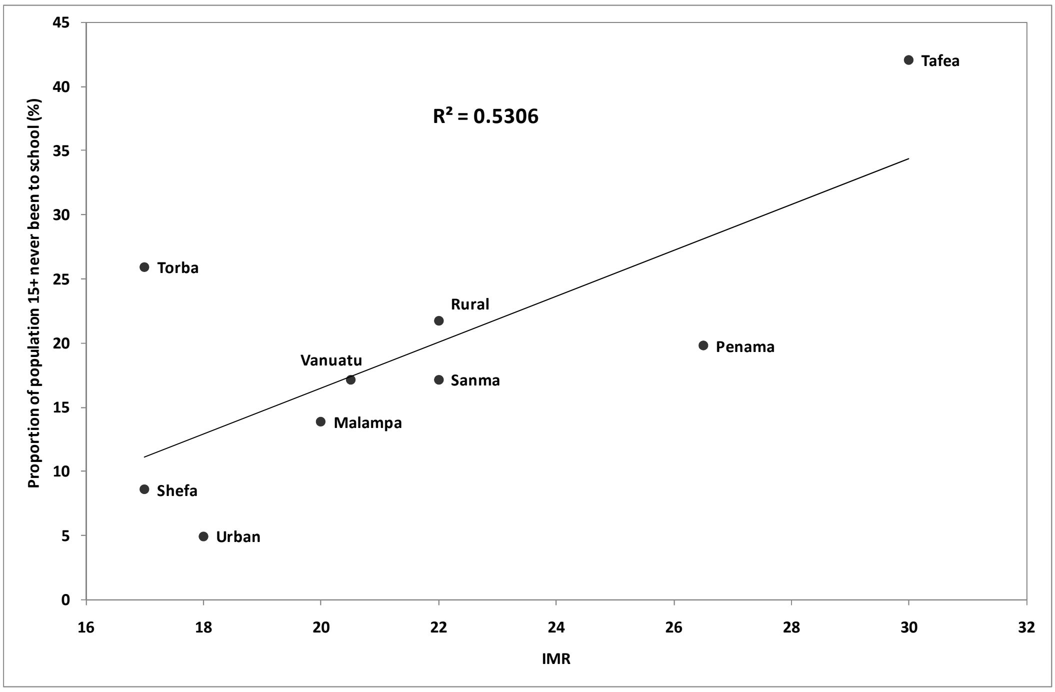
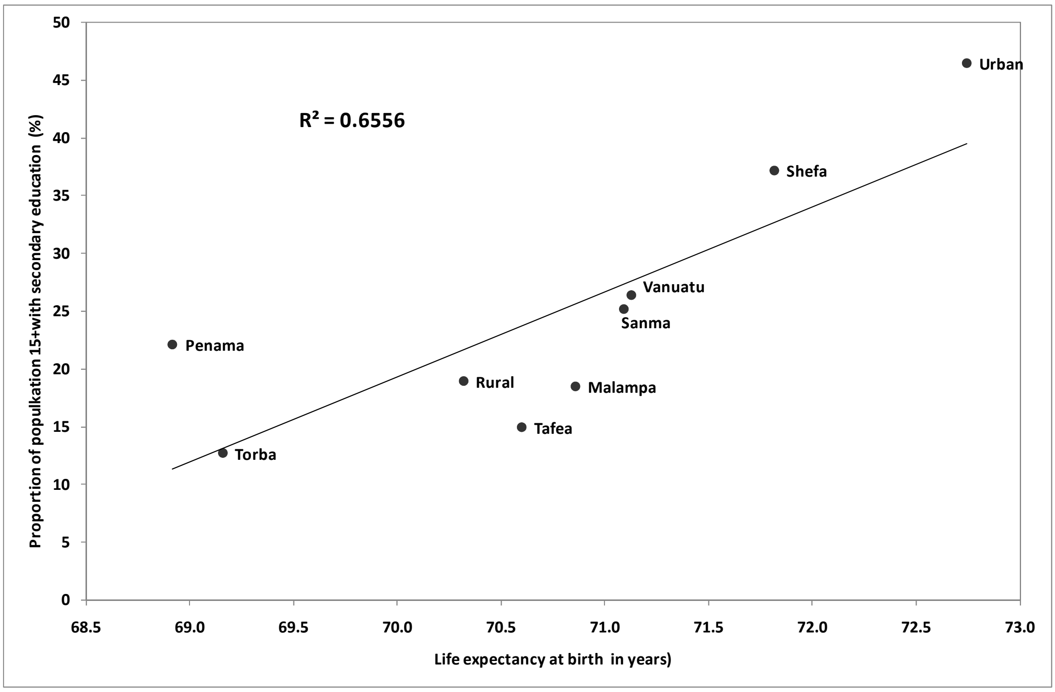


Figure 54: Infant mortality rate (IMR) and proportion of population never been to school (%) by place of residence, Vanuatu: 2009



Note: R^2 is 0.83 if the outlier Torba is omitted

Figure 55: Life expectancy at birth (e0) and proportion of population 15 years and older with secondary education (%) by place of residence, Vanuatu: 2009



3.3 Migration

3.3.1 Internal migration

Internal migration — the movement of people from one island or region of Vanuatu to another — can be estimated by comparing:

- place of usual residence with the place of residence during the census enumeration; and/or
- place of residence five years prior to the census with the place of residence during the census enumeration; and/or
- place of birth with the place of residence during the census enumeration; and
- the population size of geographic units from one census count to the next.

Usual place of residence

Based on the question regarding place of usual residence, 96% of the total population answered that their place of enumeration was also their place of usual residence, and only about 4% were enumerated at a place different from their usual place of residence (Table 24). Less than 0.2% of the population had their usual place of residence overseas of which most were enumerated in the urban areas of Shefa (Port Vila).

Table 24: Total population by place of enumeration and usual place of residence, Vanuatu: 2009

Place of residence at time of census		Usual place of residence		
		Same as place of enumeration	eslsewhere in country	eslsewhere overseas
Urban	57,195	54,354	2,541	300
Rural	176,828	170,981	5,685	162
Torba	9,359	9,133	225	1
Sanma	45,855	43,545	2,240	70
Penama	30,819	29,997	815	7
Malampa	36,727	35,555	1,152	20
Shefa	78,723	75,501	2,868	354
Tafea	32,540	31,604	926	10
Vanuatu	**234,023**	**225,335**	**8,226**	**462**

Residence five years prior to the census

Based on the question regarding place of residence five years prior to the census (in 2004), 84% of the total population aged 5 and older answered that they had not moved from their current (November 2009) place of residence, 15% (29,000 people) said that they lived elsewhere in Vanuatu, and 1,616 people (0.8%) said that they were overseas 5 years ago (Table 25). Please note that ‘elsewhere in Vanuatu’ includes places in the same province as place of enumeration, i.e. people moved inside their own province.

Table 25: Population* 5 years and older by place of enumeration and usual residence five years ago (in 2004), Vanuatu: 2009

Place of residence at time of census		Usual place of residence 5 years ago		
		Same as place of enumeration	eslsewhere in country	overseas
Urban	49,045	33,023	14,803	1,219
Rural	146,755	132,159	14,197	399
Torba	7,792	6,965	817	10
Sanma	37,617	31,542	5,918	157
Penama	25,362	23,597	1,714	51
Malampa	30,921	28,498	2,397	26
Shefa	67,201	49,538	16,311	1,352
Tafea	26,907	25,042	1,843	22
Vanuatu	**195,800**	**165,182**	**29,000**	**1,618**

*population living in private households

Data on provincial migration are displayed in Table 26. Here movement is measured in terms of changing a province, and excludes movements inside one and the same province.

Shefa had a net gain of 158 people from Torba province (247 minus 89), a net gain of 1,371 people from Sanma (2,177 minus 806), a net gain of 1,877 people from Penama (2,194 minus 317), a net gain of 1,784 from Malampa (2,511 minus 727), and a net gain of 631 people from Tafea (1,396 minus 765). Overall Shefa gained 5,821 people from all other provinces during the five-year period prior to the census (Table 26).

Torba on the other hand had a net loss of 274 people to all other provinces, Sanma a net loss of 587 people, Penama a net loss of 2,255 people, Malampa lost 2,038, and Tafea had a net loss of 667 people (Table 27 and Fig.56)).

Clearly internal migration during the 5-year period 2004-2009 was primarily directed towards Shefa province, and certainly to the capital Port Vila.

Table 26: Population* 5 years and older by place of enumeration and province of usual residence five years ago (in 2004), Vanuatu: 2009

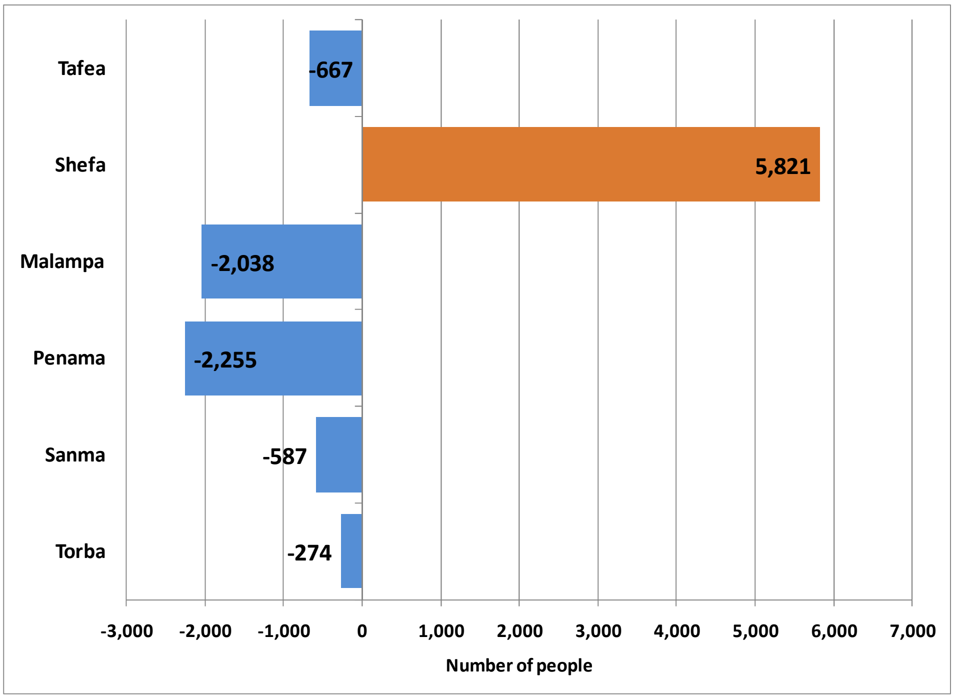
Place of residence at time of census		Usual place of residence 5 years ago						
Province	Total	Torba	Sanma	Penama	Malampa	Shefa	Tafea	Overseas
Torba	7,792	7,461	171	33	20	89	8	10
Sanma	37,617	265	34,867	712	671	806	139	157
Penama	25,362	20	380	24,464	100	317	30	51
Malampa	30,921	48	363	132	29,556	727	69	26
Shefa	67,201	247	2,177	2,194	2,511	57,324	1,396	1,352
Tafea	26,907	15	89	31	75	765	25,910	22
Vanuatu	**195,800**	**8,056**	**38,047**	**27,566**	**32,933**	**60,028**	**27,552**	**1,618**

= non-movers (i.e. those people who did not change their residence during the reference period
*population living in private households

Table 27: Interprovincial migration during the five-year period prior to the 2009 census, Vanuatu 2009

Province	In-Migrants	Out-Migrants	Net Migrants
Torba	321	595	-274
Sanma	2,593	3,180	-587
Penama	847	3,102	-2,255
Malampa	1,339	3,377	-2,038
Shefa	8,525	2,704	5,821
Tafea	975	1,642	-667
Vanuatu	**14,600**	**14,600**	**0**

Figure 56: Interprovincial net migration during the five-year period prior to the 2009 census, Vanuatu 2009



Place of birth (lifetime migration)

Sixty-six per cent (152,193) of Vanuatu's population was living at the same place where they were born, 32% (73,741 people) were born in Vanuatu but not at their current (November 2009) place of residence, and just over 1% (2,949 people) of the population was born overseas (Table 28).

Table 28: Population by place of residence and place of birth, Vanuatu: 2009

Place of residence at time of census		Place of birth		
		Same as place of enumeration	eslsewhere in country	eslsewhere overseas
Urban	56,061	19,730	34,114	2,217
Rural	172,822	132,463	39,627	732
Torba	9,189	7,260	1,904	25
Sanma	44,287	26,558	17,377	352
Penama	29,926	24,503	5,366	57
Malampa	36,060	28,568	7,440	52
Shefa	77,047	38,100	36,534	2,413
Tafea	32,374	27,204	5,120	50
Vanuatu	**228,883**	**152,193**	**73,741**	**2,949**

Almost one quarter (56,146) of the population was born in Shefa province, 20% in Malampa (45,868), almost 18% (40,262) in Sanma, about 16% each in Penama and Tafea, and just over 4% were born in Torba (Table 29).

The vast majority of the overseas born population lived in Shefa.

It is interesting to note that 34% of the population lives in Shefa today, while only 25% were born there. Overall only two-thirds (51,503) of Shefa's population was born in Shefa, while more than 90% of the population in Torba, Penama, Malampa, and Tafea were also born there. Only 77% of the 2009 population of Sanma was also born in Sanma.

Therefore data on lifetime migration (number of people by place of residence and place of birth) indicate that the direction of internal migration flows was mainly towards Shefa province.

Table 29: Population by provincial place of residence in 2009 and province of birth (lifetime migration), Vanuatu: 2009

Place of residence at time of census		Usual place of birth						
Province	**Total**	**Torba**	**Sanma**	**Penama**	**Malampa**	**Shefa**	**Tafea**	**Overseas**
Torba	9,189	8,433	328	177	69	133	24	25
Sanma	44,287	1,067	34,257	3,002	3,234	1,864	510	352
Penama	29,926	95	597	28,240	473	381	83	57
Malampa	36,060	159	780	521	33,054	1,271	223	52
Shefa	77,047	579	4,168	5,289	8,785	51,503	4,309	2,413
Tafea	32,374	40	132	132	252	993	30,775	50
Vanuatu	**228,883**	**10,373**	**40,262**	**37,361**	**45,868**	**56,146**	**35,924**	**2,949**

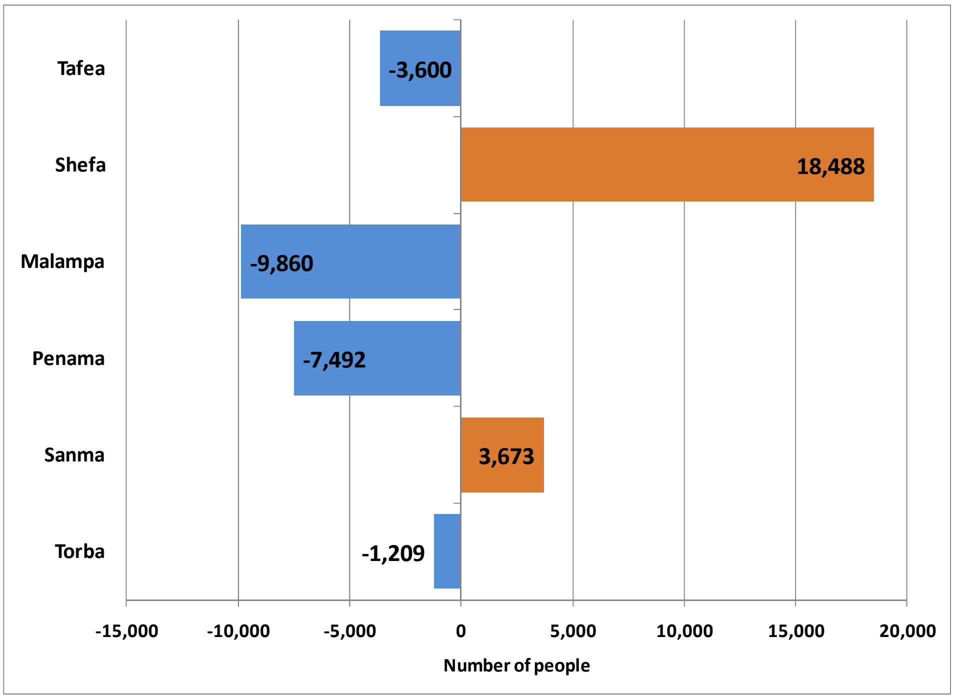
= non-movers (i.e. those people who did not change their residence during the reference period

Based on the above data, it can be seen that Shefa had a net gain of 18,488 people, mainly from Malampa. The only other province that had a net gain of people was Sanma with 3,673 people, mainly from Malampa and Penama (Table 30 and Fig.57).

Table 30: Interregional lifetime migration, Vanuatu: 2009

Province	In-Migrants	Out-Migrants	Net Migrants
Torba	731	1,940	-1,209
Sanma	9,678	6,005	3,673
Penama	1,629	9,121	-7,492
Malampa	2,954	12,814	-9,860
Shefa	23,131	4,642	18,488
Tafea	1,549	5,149	-3,600
Vanuatu	**39,672**	**39,672**	**0**

Figure 57: Interregional lifetime net migration, Vanuatu: 2009



Comparing the population size of geographic areas in 1999 and 2009

While the data above in general showed that the provinces of Sanma and Shefa with its urban centers Luganville and Port Vila where the main recipients of migrants, a closer look at the population growth rates of villages (App.20) show that the growth rates of provincial geographic units varied widely.

It can be safely assumed that places with a population growth rate significantly above the national average of 2.3%, benefitted from a net inflow of migrants, whereas places significantly below the national average suffered from a population loss due to migration.

While the province of Shefa with an annual growth rate of 3.7% had the highest growth rate of all provinces, there were a number of places (islands) in Shefa that did not benefit from the overall growth such as Buninga, Emae, Emau, Ifira, Makira, Mataso, and Tongoa who all registered a decrease in population size between 1999 and 2009.

Population balancing equation

Estimates derived by using the balancing equation reveal the following (Table 31):

While Shefa gains 1,370 people annually, Tafea loses 650, Malampa loses 400, and Penama and Torba lose 260 and 60 people annually respectively. Sanma's annual net migration is zero (in- and out migration balances each other (refer also to chapter 6, section 6.2, Table 56).

In proportion to the population size of each province, the migration rates are as follows: while Shefa gains 1.6% of its population through migration, Tafea loses 1.9% of its population; Malampa loses 1%, Penama 0.8%, and Torba 0.6% annually.

Table 31: Estimates of annual net migration by province, Vanuatu: 2009

	Torba	Sanma	Penama	Malampa	Shefa	Tafea	Vanuatu
Annual net migrants	-60	0	-260	-400	1,370	-650	0
Annual net migration rate	-0.6	0.0	-0.8	-1.0	1.6	-1.9	0.0

3.3.2 International migration

International migration refers to people who cross national boundaries to move to another country. In addition to this spatial consideration, time also plays a major role in the analysis of migration. People are usually regarded as migrants only after spending a minimum period of time in their country of destination. Usually the minimum time required to qualify as a migrant is half a year in-country, and sometimes even a full year. Someone coming for a short visit is not considered to be a migrant — he or she is considered to be a visitor or tourist.

Intent is also of crucial importance, as migration usually involves a change of a person’s permanent residential address in pursuit of employment or educational opportunities.

The need to consider time and intent highlights one of the key problems concerning migration. Whether or not a particular person qualifies as a migrant can only be established after a certain period of time, usually at least six months, in order to determine whether the arriving and departing person qualifies as a visitor or migrant.

The net impact of migration flows (net migration) is measured as the difference between the number of arrivals (immigrants) and departures (emigrants) during a certain time period.

Net migration = **Arrivals** (immigrants) minus **Departures** (emigrants)

Therefore, if **net migration** was positive it means that the number of arrivals (immigrants) was higher than the number of departures (emigrants); if net migration was negative, the number of departures (emigrants) was higher than the number of arrivals.

The 2009 census included three questions that provide an indication of the level of immigration.

Questions were asked about a respondent's:
- usual place of residence;
- residence five years prior to the census; and
- place of birth.

Regarding respondent’s usual place of residence, only 462 answered that they usually live overseas; all other persons (233,561) had their usual residence in Vanuatu in 2009 (Table 24).

Regarding residential address five years prior to the census, 1,618 people (or less than 1%) of the population five years and older answered that they lived overseas (Table 25).

Regarding place of birth, 2,949 people (or just over 1% of the population) answered that they were born overseas (Table 28).

However, these questions only give an indication on the level of immigration

The only indirect method for deriving at a crude indication of Vanuatu’s net migration level would be to apply the balancing equation to the intercensal 1999–2009 population growth rate.

Balancing equation

Population growth = **Births** minus **Deaths** plus **Net migration**

Net migration rate can be estimated as

Net migration = **Population growth** minus **Births** plus **Deaths**

The intercensal population growth rate was 2.3%, and the estimated CBR and CDR are 31.3 per 1000 and 5.4 per 1000.

The derived net migration rate would be:

2.3 – 3.13 + 0.54 = **-0.29%**

However, there are strong indications that the 2009 census suffered from a slight under count in some age groups, as described in more detail in chapter 6, which would adjust the intercensal growth rate to about 2.6%. In this case, the calculated net migration rate would be zero, and no significant international migration had occurred during the intercensal period 1999-2009.

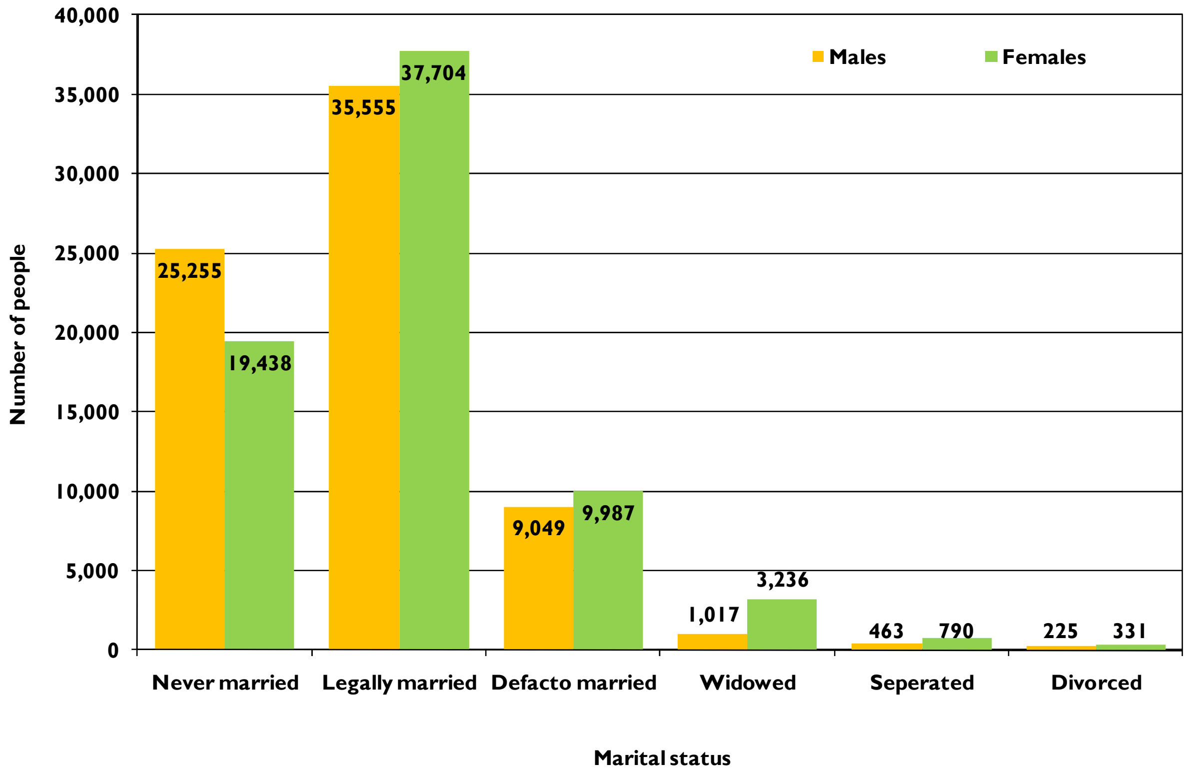
4. SOCIAL CHARACTERISTICS

4.1 Marital status

During the 2009 census, 50% of males (35,555) and 53% of females (37,704) aged 15 and older were legally married and another 13% of males and females were living in a de facto relationship (Fig.58). The proportion never married (single), were 35% of males (25,255) and 27% of females (19,438).

A higher proportion of females (5%) were widowed than males (1%).

Figure 58: Population aged 15 and older by marital status, Vanuatu: 2009



The age at marriage is an important proximate determinant of fertility. Women who marry at an early age often have more children than those marrying later.

The higher proportion of young married women compared with men of the same age indicates that women generally marry at younger ages than men (Table 32 and Fig.59). The average age at marriage was 25.5 and 22.5 years for males and females, respectively, and was calculated based on the proportion of those never married/single by age. There were notable differences in the age at marriage between provinces (Fig.61). While the age at marriage was oldest in Malampa and

Shefa, it was very young in Tafea where the age difference between spouses was the smallest (1.8 years).

While only 3% of males were married at ages 15-19, it was almost 12% of females (Table 32 and Figs.60 and 62).

At age 20-24 more than half of all women were already married compared with 29% of males. Compared to earlier censuses, the percentage of males and females married at young ages has declined, while the age difference between males and females has slightly increased compared to the 1989 and 1999 censuses.

Table 32: Singulate mean age at marriage (SMAM[9]) and percentage married at young ages by sex, Vanuatu: 1967, 1979, 1989, 1999, and 2009

Year	Average age at first marriage			Percentage ever married by age group (%)			
	SMAM*		Age difference	15-19		20-24	
	Males	Females	males - females	Males	Females	Males	Females
1967	26.6	21.2	5.4				
1979	26.1	22.2	3.9	2.8	10.3	32.1	56.4
1989	25.2	22.6	2.6	3.4	12.8	30.9	58.0
1999	25.3	23.0	2.3	2.6	14.0	28.9	59.0
2009	25.5	22.5	3.0	3.2	11.5	28.6	54.7

[9] 1983. United Nations. Manual X, indirect techniques for demographic estimation. New York: United Nations. 304 p.

Figure 59: Singulate mean age at marriage (SMAM) by sex, Vanuatu: 1967-2009

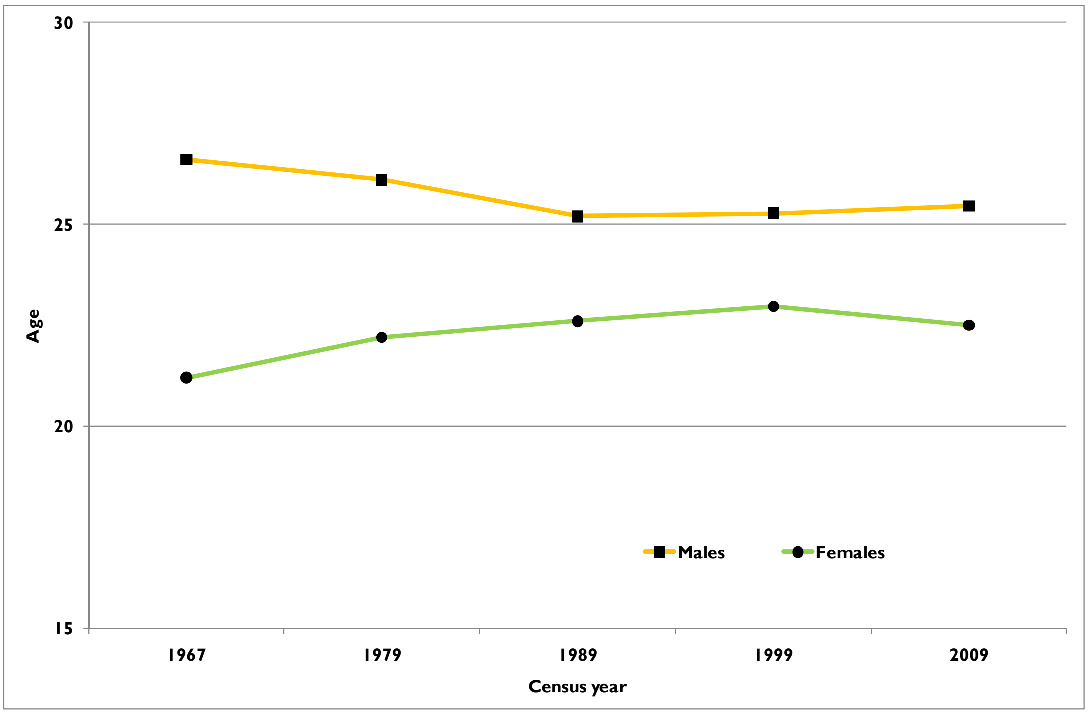
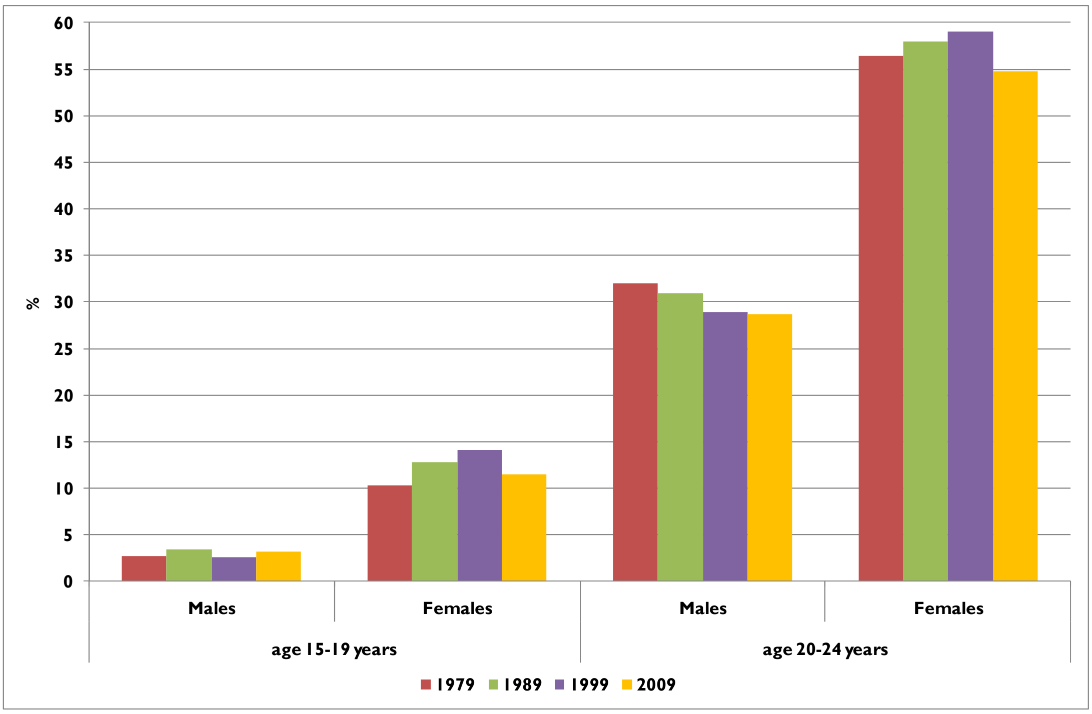


Figure 60: Population married at young ages by sex (%), Vanuatu: 1979, 1989, 1999, and 2009



Figures 63 and 64 display the proportion of males and females married/never married by age. Clearly these two figures complement each other. When the proportion of the population married at a certain age is low, it is high for the proportion of the population never married at the same age, and vice versa.

Furthermore, the proportion of females in a married status is higher than that of males until age 34. Then the proportion of married females is steadily declining because an increasing number of females become widows (Fig.65).

The discrepancy between the proportion of widowed males and widowed females, at ages 40 and older, increased continuously (Fig. 65). Between ages 40–45, only 1% of males were widowed, compared with 3% of females. At age 60 and older, only 10% of males were widowed, compared with 27% of females.

The higher proportion of widowed females is explained by:

- lower female mortality rates, and therefore longer life expectancies of female spouses; and
- older age at marriage of males compared with their female partners as expressed in the average age at marriage (SMAM) above.

Therefore, male spouses usually die before their female partners.

Figure 61: Average age at marriage (SMAM) by sex and province, Vanuatu: 2009

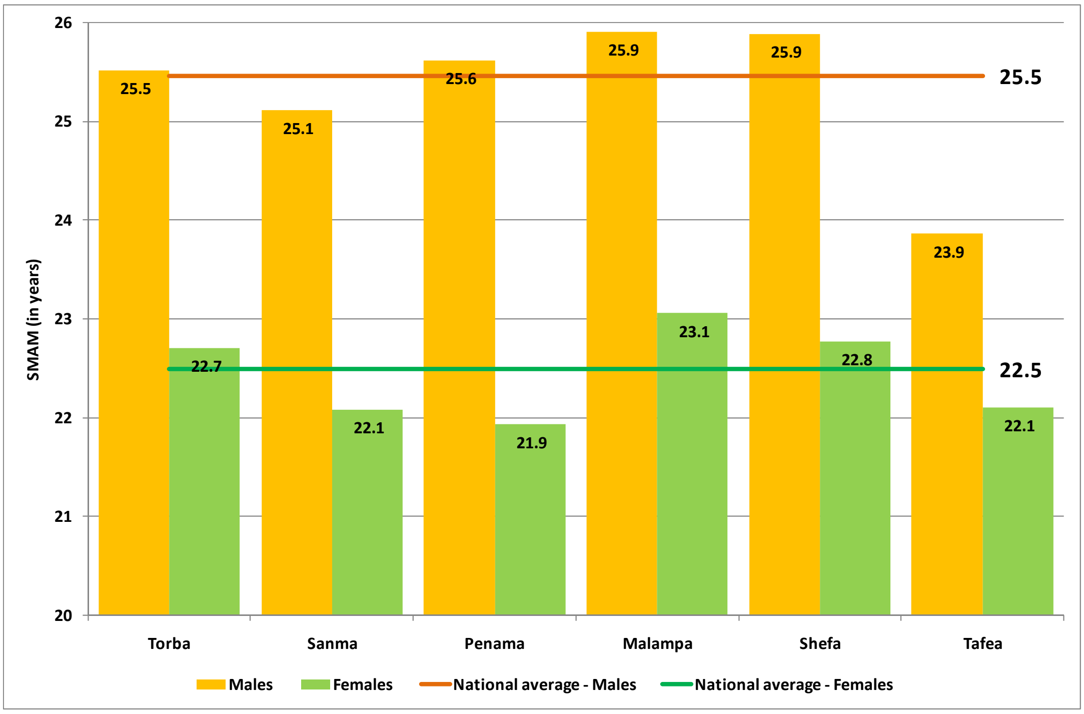


Figure 62: Population married at age 15-19 years by sex and province (%), Vanuatu: 2009

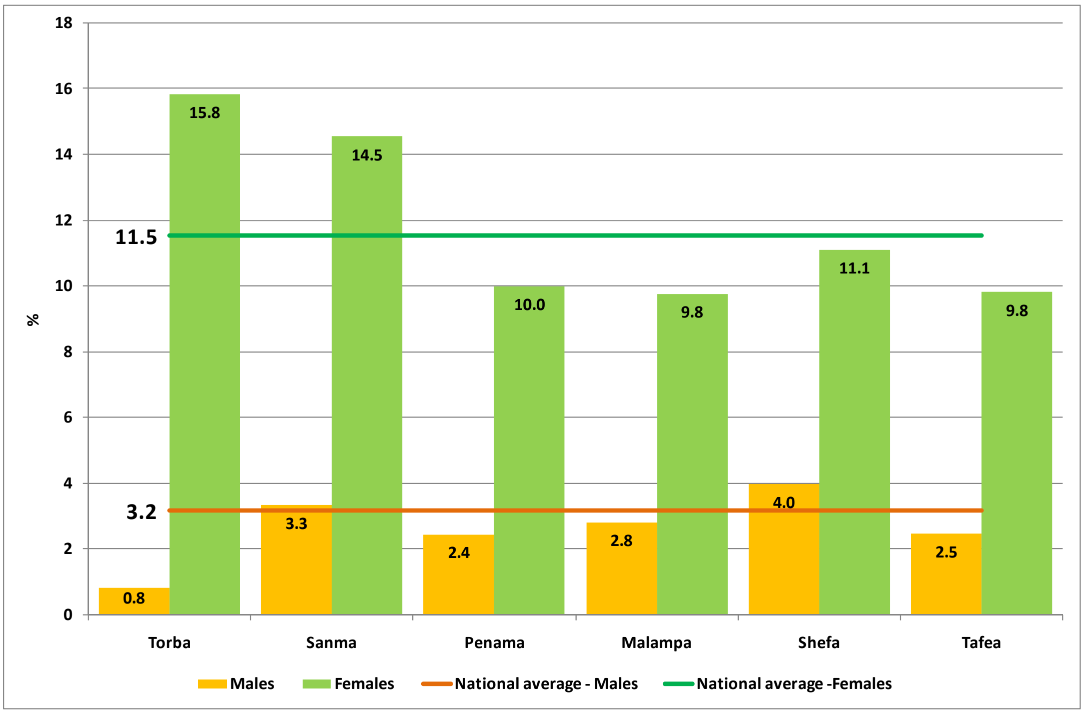
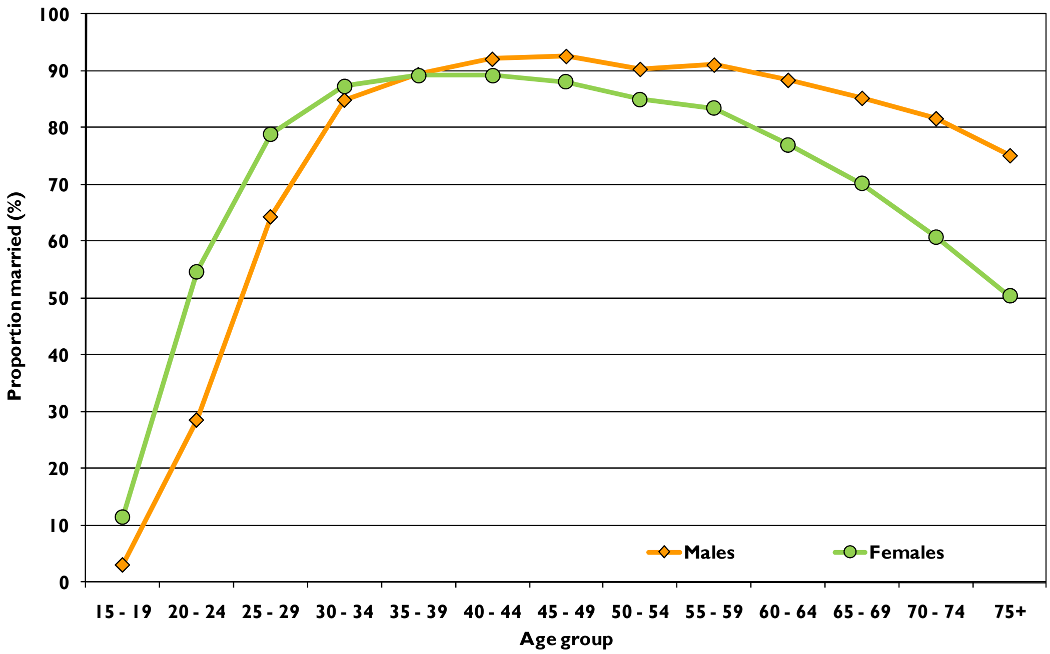


Figure 63: Population aged 15 and older by sex and proportion married, Vanuatu: 2009



Note: 'Married' include legally married and de facto relationships

Figure 64: Population aged 15 and older by sex and proportion never married (single), Vanuatu: 2009

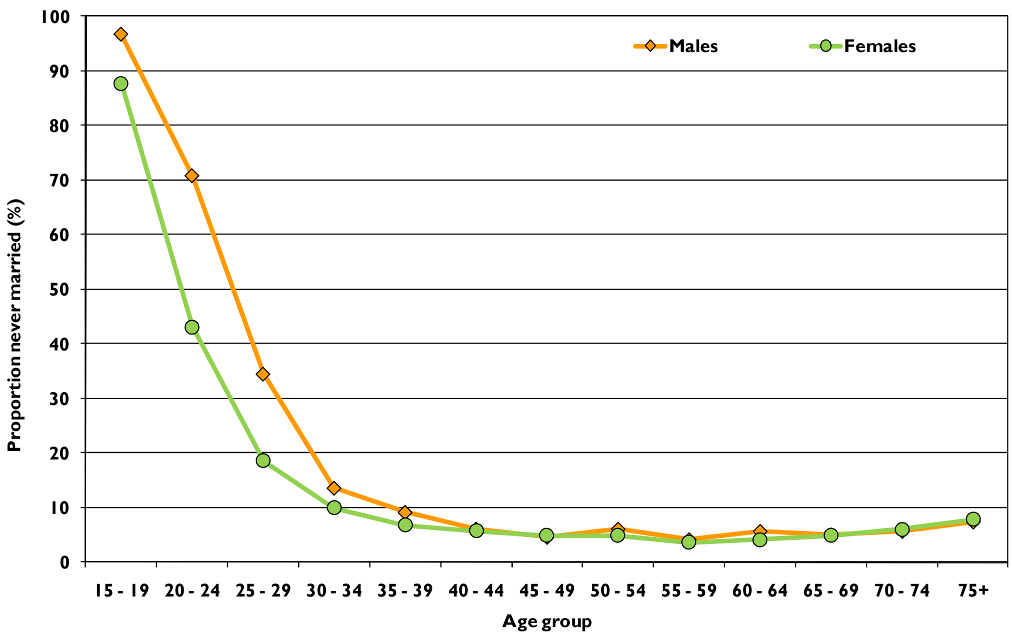
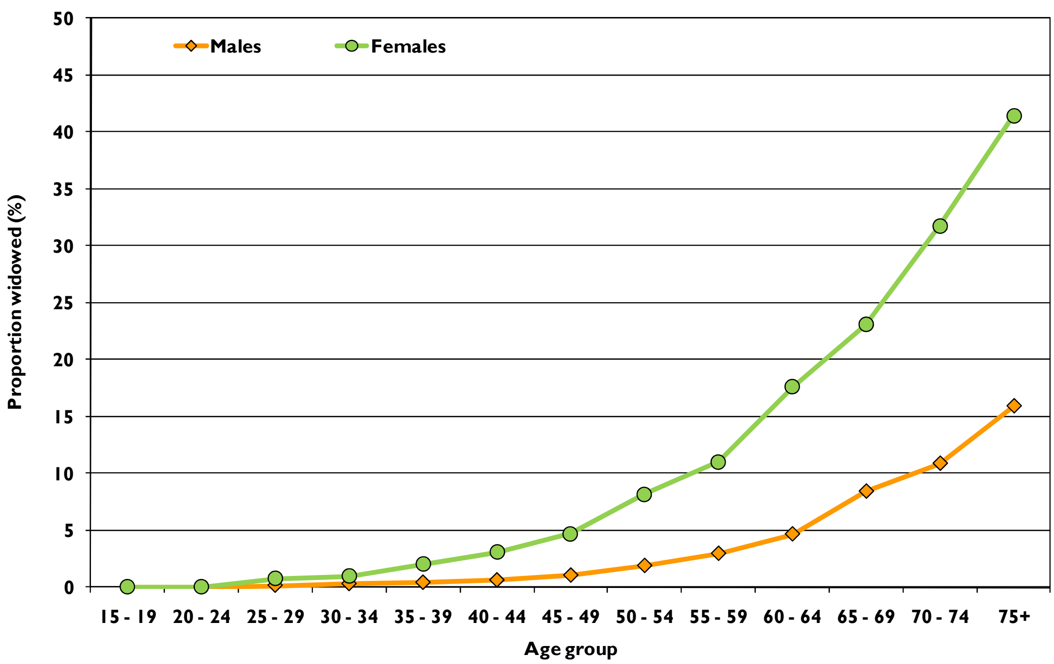


Figure 65: Population aged 15 and older by sex and proportion widowed, Vanuatu: 2009



4.2 Religion

The question on religion was not compulsory. Nevertheless, only 0.2% or 484 people refused to respond or did not respond to this question.

The Presbyterian Church of Vanuatu (PCV) continued to be the dominant religious denomination in Vanuatu, although its share had decreased from 36% in 1989 to 28% or 65,345 persons in 2009 (Table 33 and Fig.66).

Table 33: Population by religious affiliation, Vanuatu: 1989, 1999 and 2009

Religion	1989	1999	2009
Anglican	19,949	25,084	35,256
Presbyterian	50,951	58,540	65,345
Catholic	20,613	24,515	28,933
SDA	11,737	20,068	29,251
Church of Christ	6,745	8,047	10,593
Assemblies of God	-	8,040	11,078
Neil Thomas Minsitry	-	6,406	7,223
Apostolic	-	3,377	5,231
Customary beliefs	6,484	10,365	8,600
No religion	2,437	1,919	2,554
Refuse to answer	5,755	2,374	484
Others	17,748	17,943	29,475
Total	**142,419**	**186,678**	**234,023**

Note: ‘Others’ refers to newly formed religions

The next largest group was the Anglican Church with 35,256 members, with a share of 15% of all denominations, followed by the Seventh Day Adventist Church (SDA) and the Catholic Church with a share of 12% each.

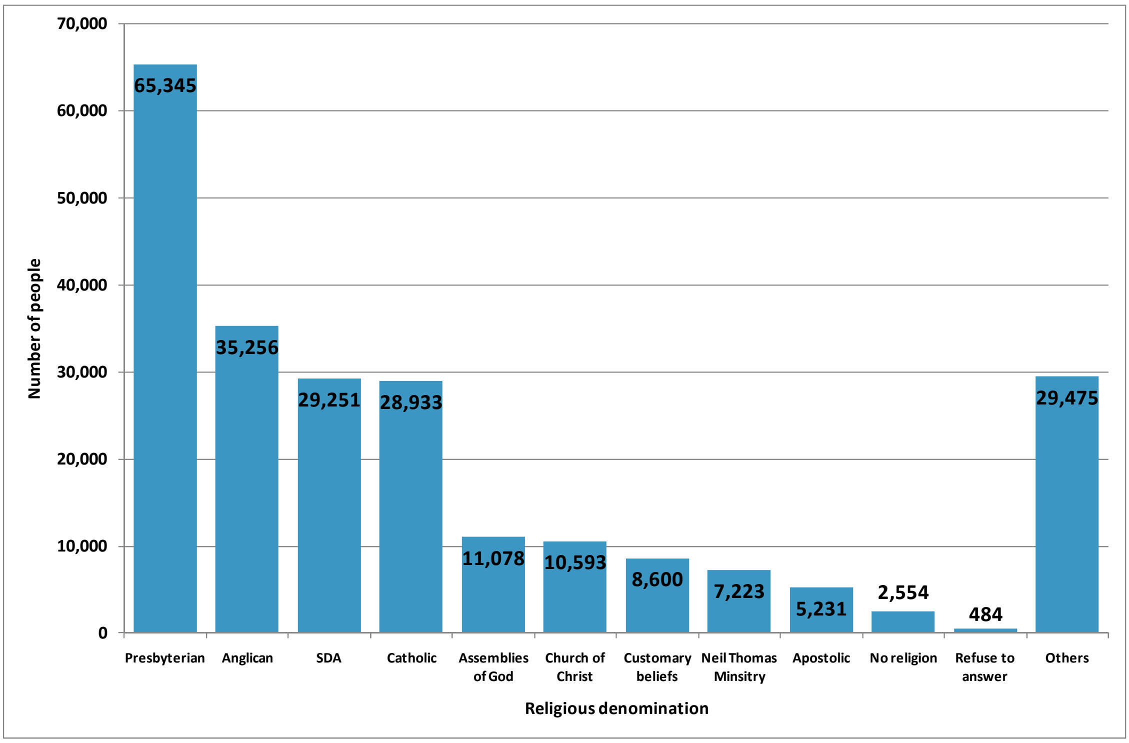
Other denominations (Church of Christ, Assemblies of God, Neil Thomas Ministry and Customary beliefs) had less than 5% of the population as members and persons with no religion comprised of 1% of the Vanuatu population.

The category “Others” comprises of 88 different religions ranging from 1 member to more than 2 thousand members.

The compositions of the different religious denominations were markedly different between the provinces (Fig.67). While Penama and especially Torba were dominated by the Anglican Church, the Presbyterian Church was the main religion in Malampa and Shefa. While the Presbyterian Church was also strong in Sanma, this province showed the most diverse mix of religions of all provinces.

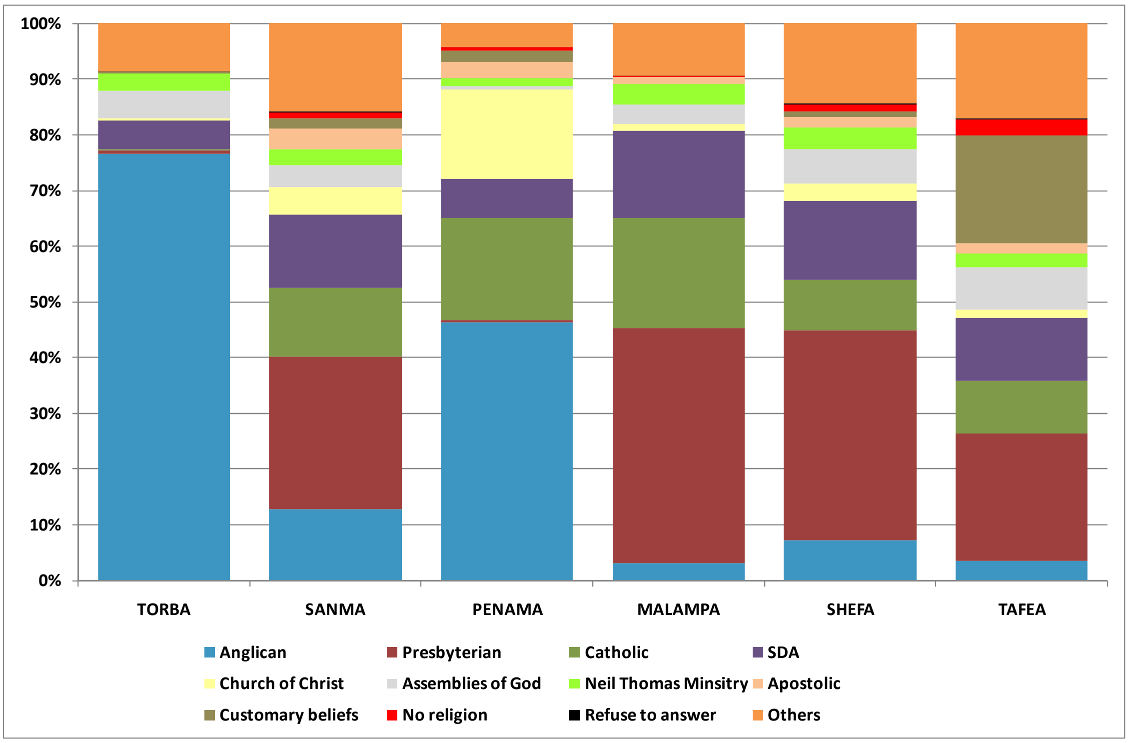
One in five people in Tafea stated *Customary beliefs* as their religious affiliation.

Figure 66: Population by religious affiliation, Vanuatu: 2009



Note: 'Others' refers to newly formed religions

Figure 67: Population by religious affiliation by province, Vanuatu: 2009



Note: 'Others' refers to newly formed religions

4.3 Ethnic origin

Based on information on the number of people by ethnic origin, Vanuatu has a very homogenous population composition, with 98% or 223,394 persons being Ni-Vanuatu, 1% or 2,617 persons were Part Ni-Vanuatu and 1% or 2,872 persons were of foreign descent (Table 34 and Figure 68).

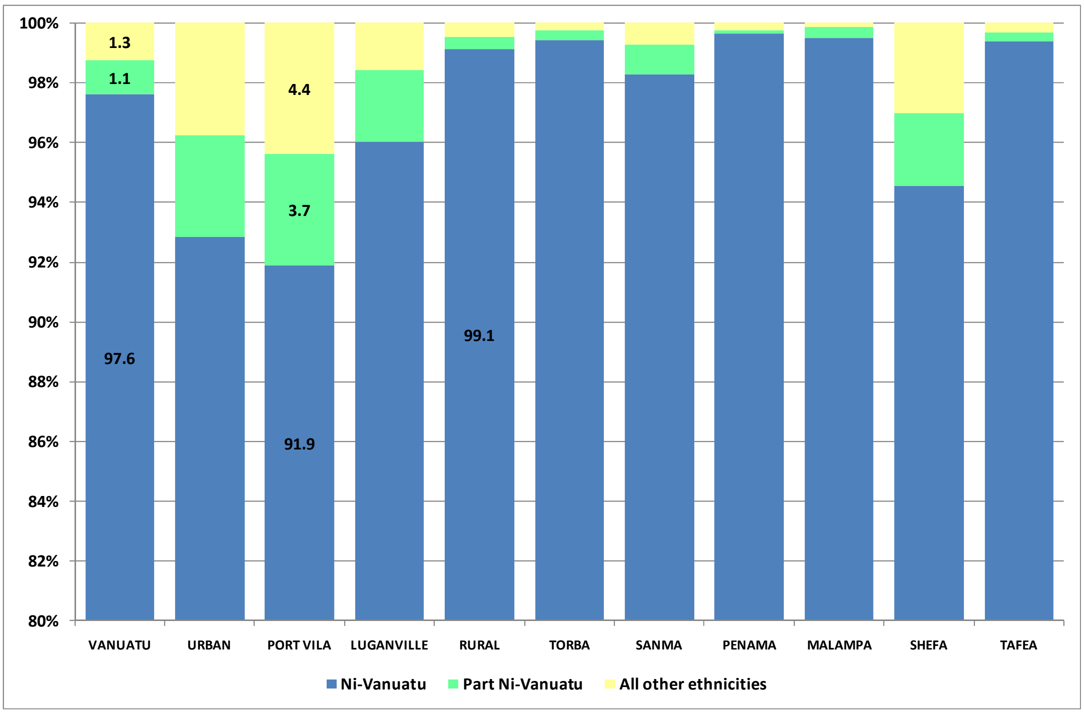
The largest single groups of foreign descent were of Australian, New Zealander and European origin (1,566), followed by Melanesians other than N-Vanuatu (507), and Asians (496).

Table 34: Population living in private households by ethnic origin, Vanuatu: 2009

Ethnic origin	Number of people	%
Ni-Vanuatu	223,394	97.6
Part Ni-Vanuatu	2,617	1.1
Other Melanesian	507	0.2
Polynesian	183	0.1
Micronesian	82	0.0
EU/Aust/NZ	1,566	0.7
Asian	496	0.2
African	38	0.0
Total	**228,883**	**100**

Note: 'EU (European), Aust (Australian), NZ (New Zealander)

Figure 68: Population by ethnic origin and place of residence (%), Vanuatu: 2009



Eighty per cent of people of foreign descent lived in the province of Shefa, and the vast majority in Port Vila.

More than 99% of the population in the provinces Torba, Penama, Malampa and Tafea were Ni-Vanuatu.

4.4 Health

4.4.1 Disability

Vanuatu is a signatory to a United Nations convention to uphold the rights of people with disabilities; and is therefore obliged to:

"Promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and to promote respect for their inherent dignity."

For the 2009 Census the VNSO was requested by the Government and stakeholders to collect information on disabilities in Vanuatu.

The question on disabilities included in the 2009 Census were whether a person had any difficulties or health problems in seeing, hearing, walking, and/or remember or concentrating – regardless of the severity of the difficulties experienced (Table 35). It was also asked whether a person cannot see, hear, walk or remember or concentrate at all – in other words, whether a person is blind, deaf, lame or senile and/or amnesic (Table 36).

Overall, about 12% of the total population reported a disability, and the proportion of females with a disability was slightly higher than that of males.

The disability that was most commonly mentioned were difficulties with seeing (17,584 people) followed by difficulties with walking (12,565), remembering and/or concentration (9,259), and hearing (7,827).

Table 35: Population* reporting a disability regardless of the severity of the disability, Vanuatu: 2009

Disability	Total	Males	Females
Vision	17,584	8,573	9,011
Hearing	7,827	3,938	3,889
Walking	12,565	5,738	6,827
Remembering or concentrating	9,259	4,284	4,975

*Population living in private households

About 1,000 people reported that they could not walk at all (lameness), about 800 people were senile and/or amnesic, another 500 people were deaf, and almost 400 people were blind.

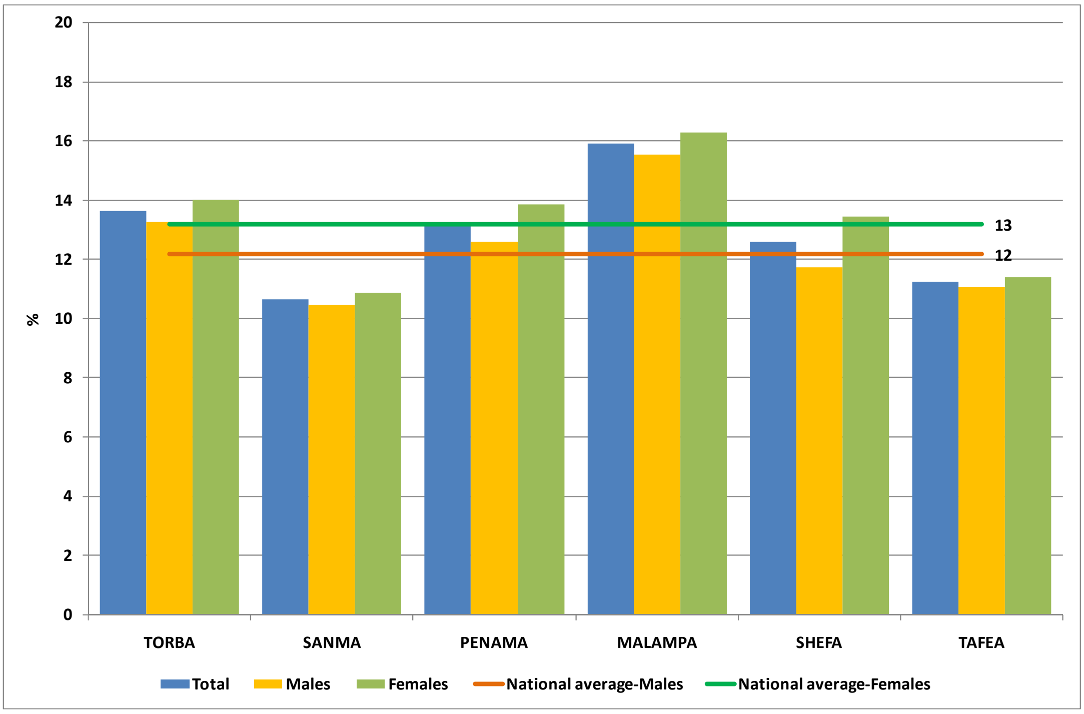
Table 36: Population* reporting a severe disability, Vanuatu: 2009

Disability	Total	Males	Females
Blindness	397	207	190
Deafness	504	284	220
Lameness	1,010	479	531
Senile and/or amnesic	810	408	402

*Population living in private households

The proportions of the population with a disability were notably higher in Malampa compared to the national average, and it was lower in Sanma and Tafea (Fig.69).

Figure 69: Proportion of the population by sex and place of residence reporting a disability regardless of the severity of the disability, Vanuatu: 2009



As can be expected, the proportion of the population with a disability increased with age (Figs.70-74).

While about 6% of children younger than 5 years of age had a disability, it was below 5% for young people aged 5-24 years. From age 40 and onwards, the proportion of the population with a disability increased continuously. More than half of the population older than 60 years reported a disability (Fig.70). The difficulty that was most commonly mentioned by the older population was vision (Fig.71) and walking (Fig.39).

Figure 70: Proportion of the population by age and sex reporting a disability regardless of the severity of the disability, Vanuatu: 2009

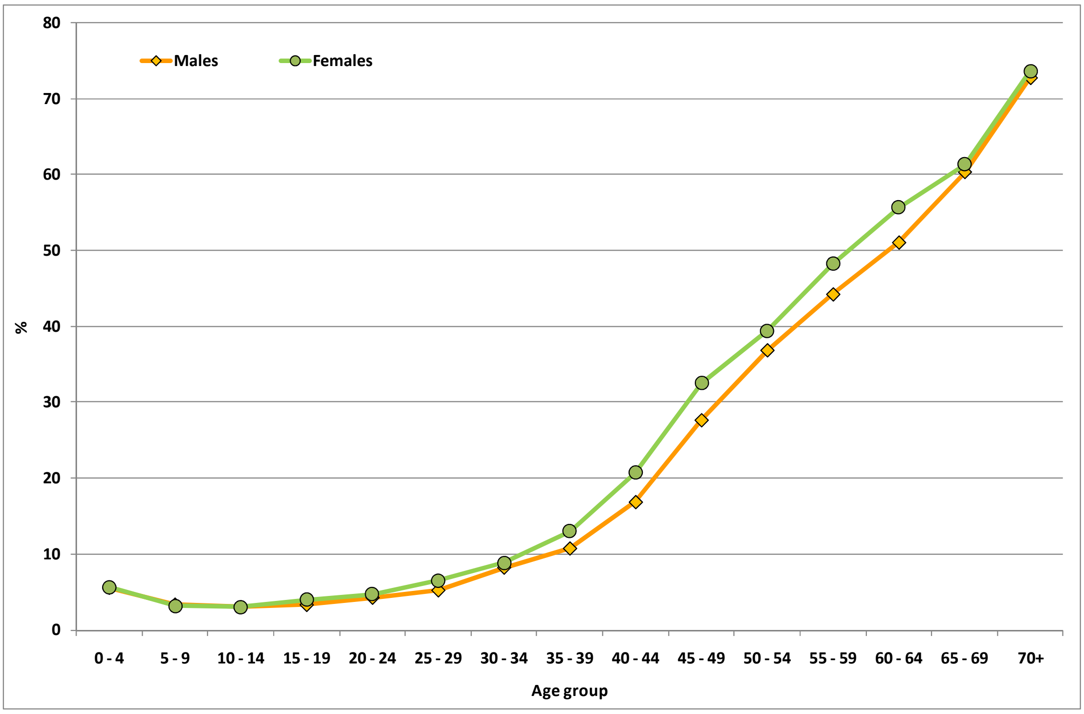


Figure 71: Proportion of the population by age and sex reporting difficulties seeing, Vanuatu: 2009

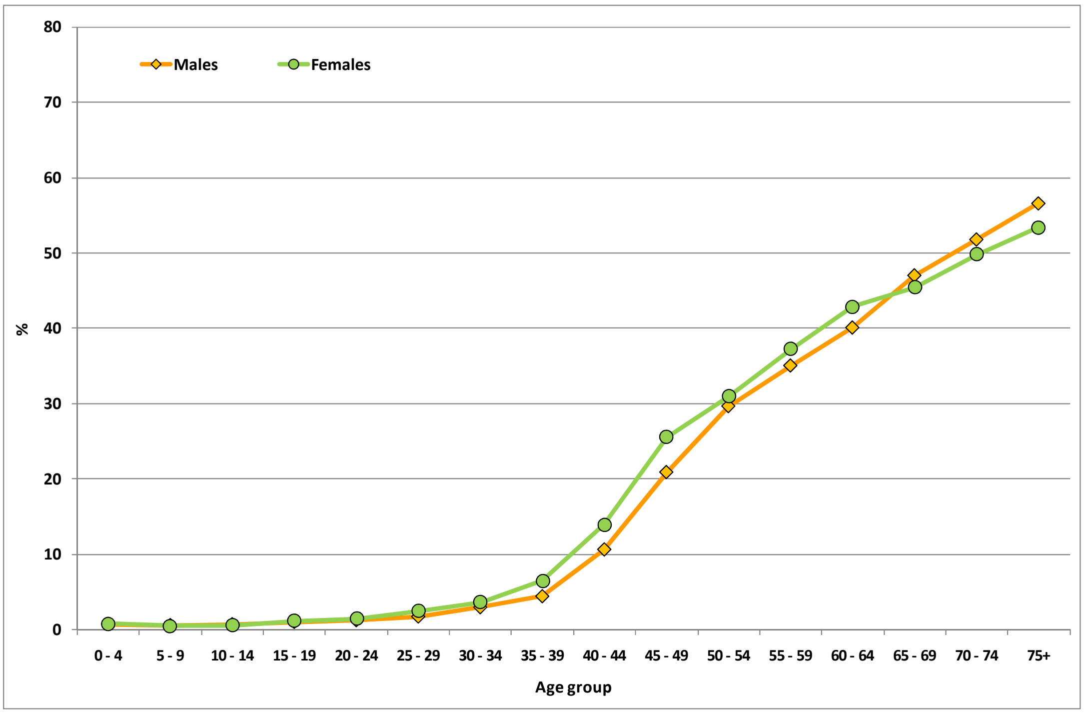


Figure 72: Proportion of the population by age and sex reporting difficulties hearing, Vanuatu: 2009

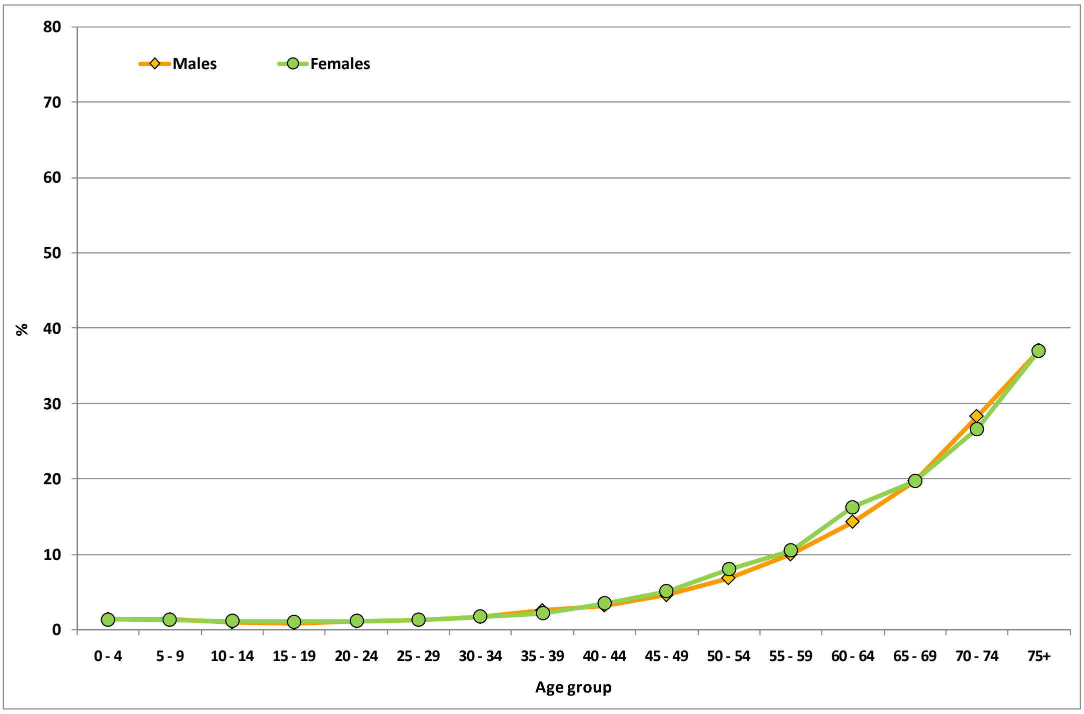


Figure 73: Proportion of the population by age and sex reporting difficulties walking, Vanuatu: 2009

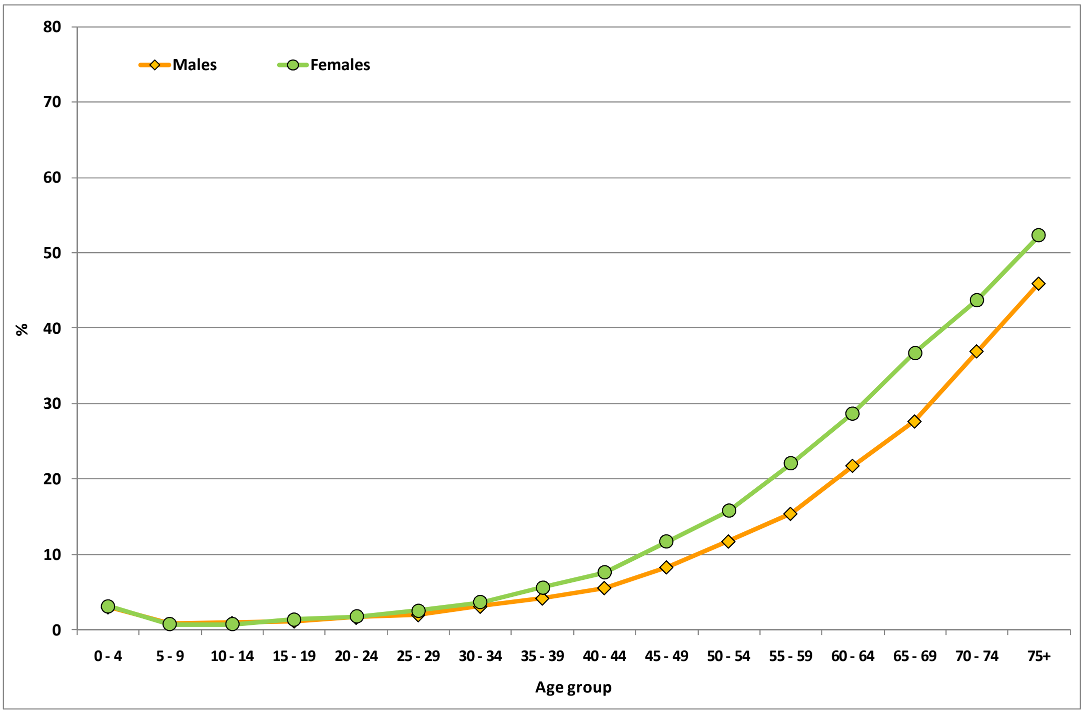
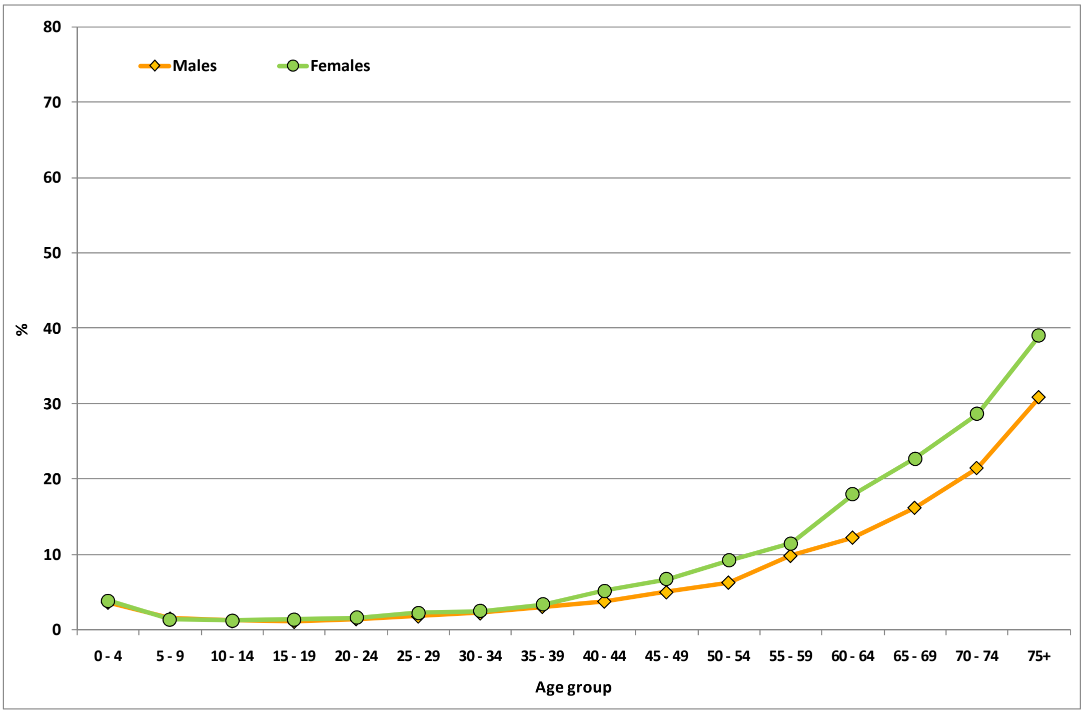


Figure 74: Proportion of the population by age and sex reporting difficulties remembering or concentrating, Vanuatu: 2009



4.4.2 Smoking and drinking habits

Following a request from the Ministry of Health and other data user groups, the 2009 census questionnaire included several questions on smoking and drinking habits. The questions were particularly aimed at collecting information on a person's consumption habits with respect to smoking cigarettes or tobacco, and drinking alcohol and/or kava during the week before the census. Questions on the frequency and quantity/volume of the substance consumed were not asked.

With respect to smoking cigarettes or tobacco, about 45% of males and 4% of females reported to be smokers (Figs.75 and 76); 17% of males and 3% of females reported to drink alcohol (Figs.77 and 78); and 53% and 8% of males and females drank kava (Figs. 79 and 80).

Smoking cigarettes or tobacco

The proportion of male smokers was higher in the rural than the urban areas, and the highest in Torba, where more than half of all males smoke. Interestingly, the proportion of female smokers was higher in the urban than the rural areas (Fig.75).

The highest proportion of male smokers were aged 20-39 years, at which age more than half of all males smoke cigarettes or tobacco. However, the highest prevalence of smoking was among the 25-29 year olds with 60% of smokers. From the age of 30 years the proportion of smokers continuously decreases with increasing age (Fig.76).

Female smoking was at a constant low level of about 4% at any age of women, except for a slightly higher rate at age 20-24 years.

Drinking alcohol

The consumption of alcohol is significantly higher in the urban than the rural areas, although overall the proportion of the population that drinks alcohol is significantly lower than those that smoke or drink kava. The consumption of alcohol is very low in Torba and Penama (Fig.77).

The highest proportion of male drinkers was aged 20-34 years, at which age about one-quarter of all males drink alcohol. However, from the age of 30 years the proportion of alcohol drinkers continuously decreases with increasing age (Fig.78).

Female drinkers of alcohol was at a constant low level of about 3% at any age of women, except for a slightly higher rate at age 20-29 years.

Drinking kava

The highest proportion of kava consumption is found in Torba were two-third of all males drink kava and about 20% of females. Kava consumption was also high in Penama. Overall the proportion of male kava drinkers was lower in the urban than the rural areas, but it was the opposite for females; more female kava drinkers were found in the urban than the rural areas (Fig.79).

The highest proportion of male kava drinkers were aged 25-39 years, at which age more than two-third of all males drink kava. However, from the age of 40 years the proportion of kava drinkers continuously decreases with increasing age (Fig.80).

Female kava drinking peaked at ages 35-49, when slightly more than 10% of women drink kava. From the age of 50 the proportion of female kava drinkers continuously decreases with increasing age. Kava drinking among women was lowest among teenage women and women older than 70 years.

Figure 75: Proportion of the population 15 years and older by sex and place of residence who smoke cigarettes or tobacco (%), Vanuatu: 2009

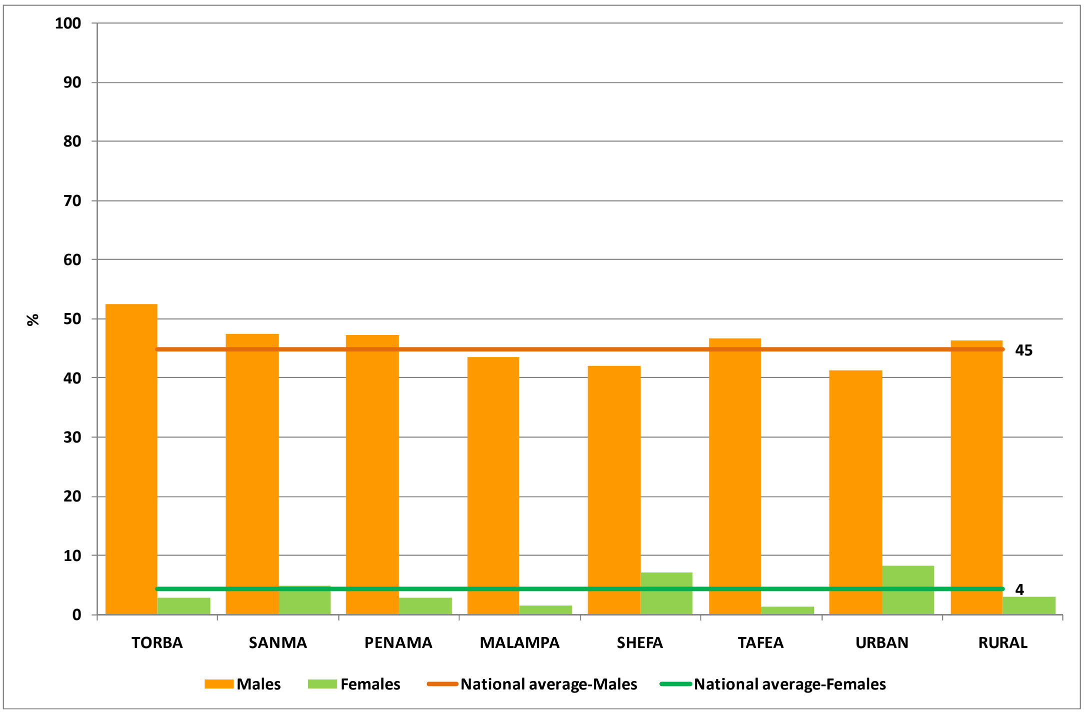


Figure 76: Proportion of the population 15 years and older by age and sex who smoke cigarettes or tobacco (%), Vanuatu: 2009

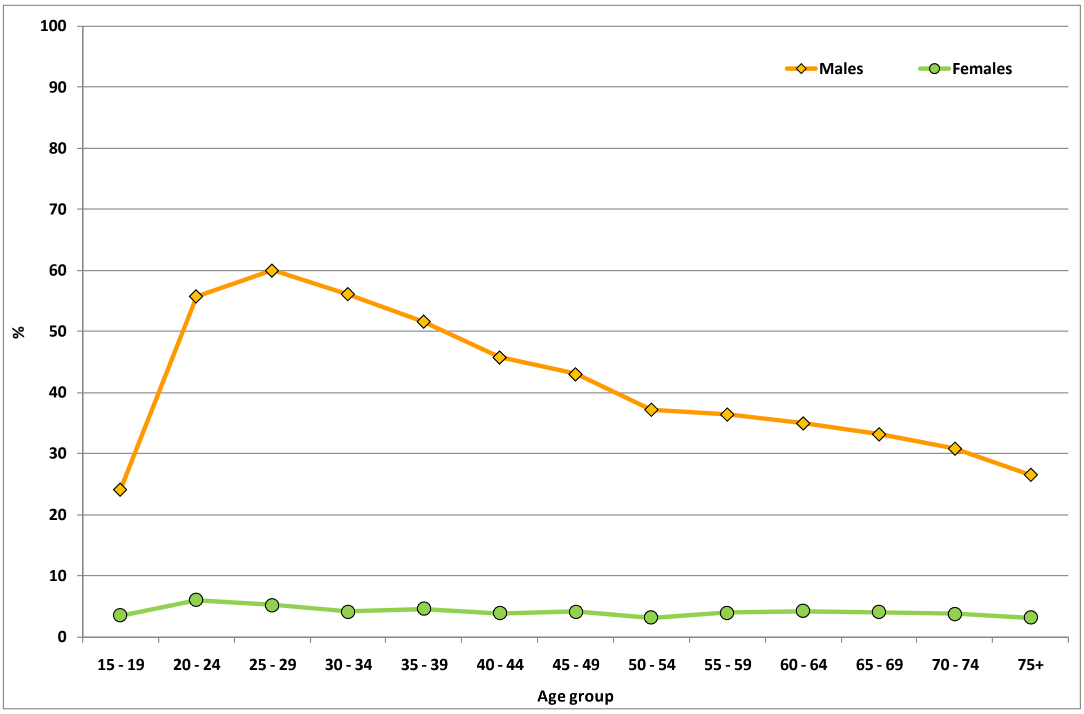


Figure 77: Proportion of the population 15 years and older by sex and place of residence who drink alcohol (%), Vanuatu: 2009

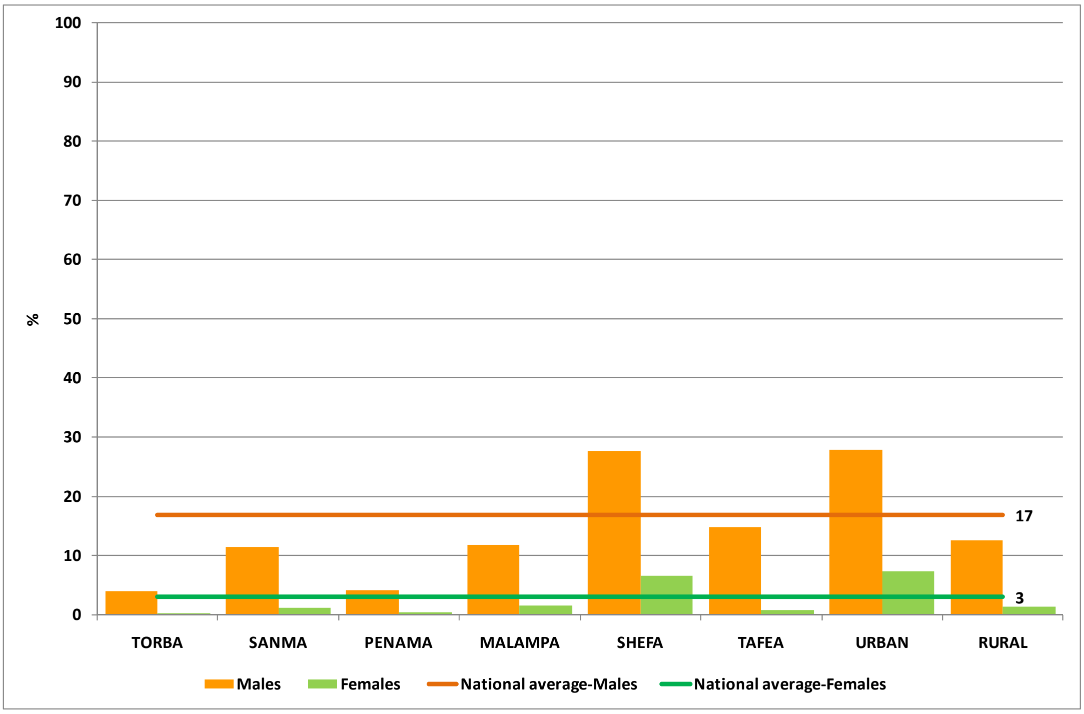


Figure 78: Proportion of the population 15 years and older by age and sex who drink alcohol (%), Vanuatu: 2009

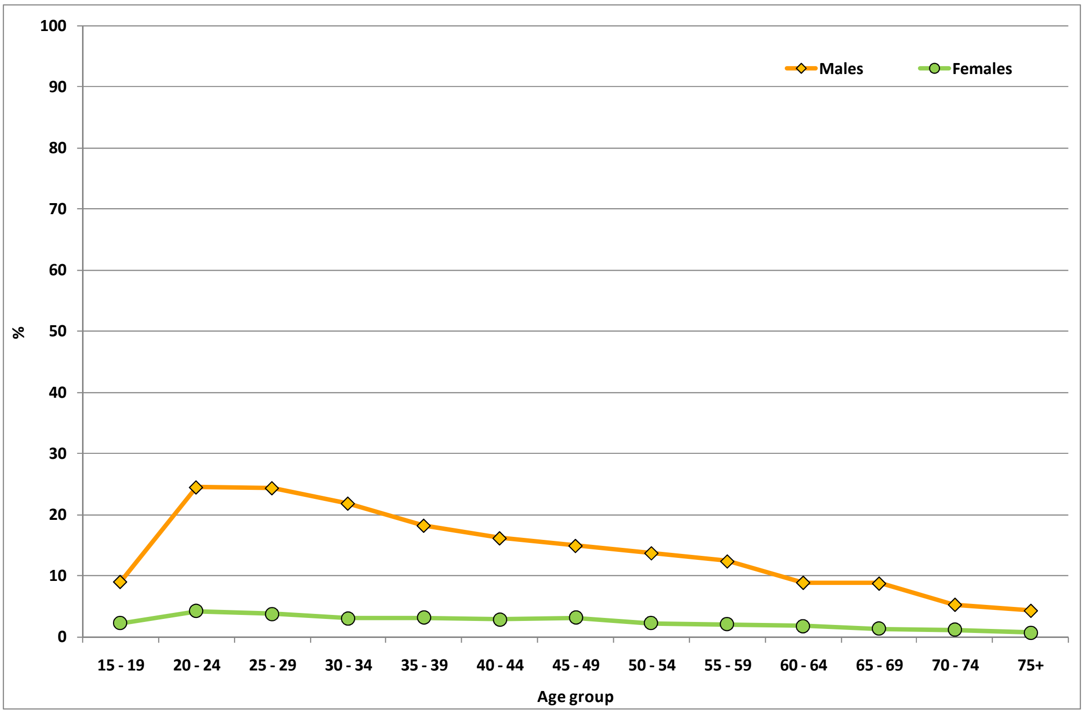


Figure 79: Proportion of the population 15 years and older by sex and place of residence who drink kava (%), Vanuatu: 2009

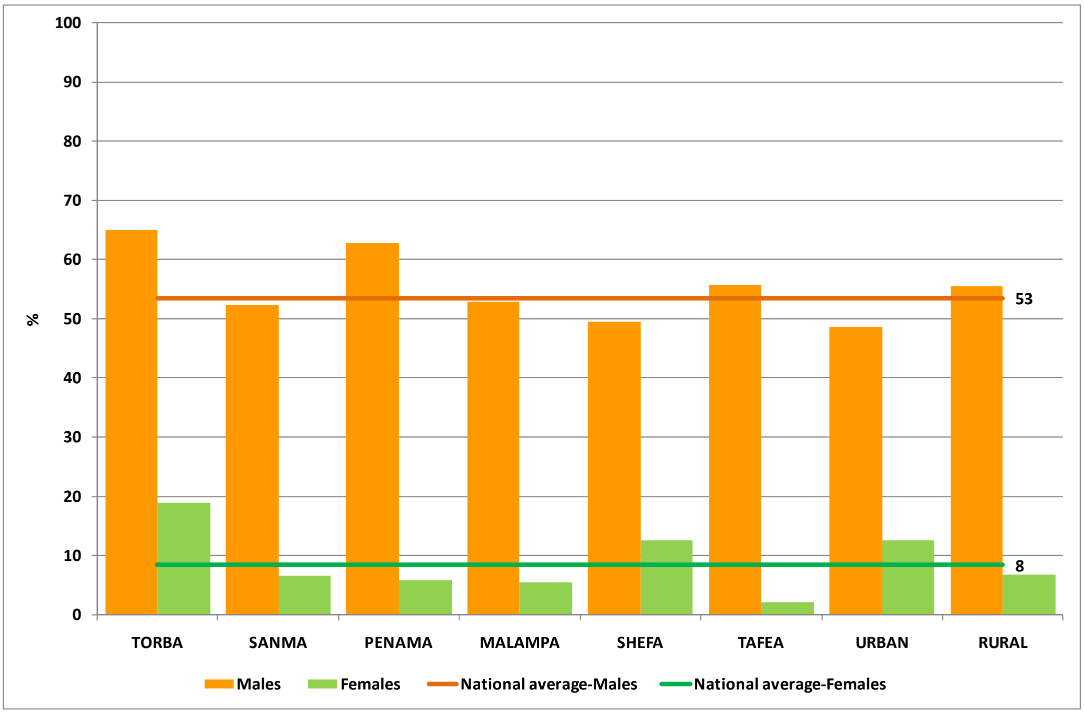
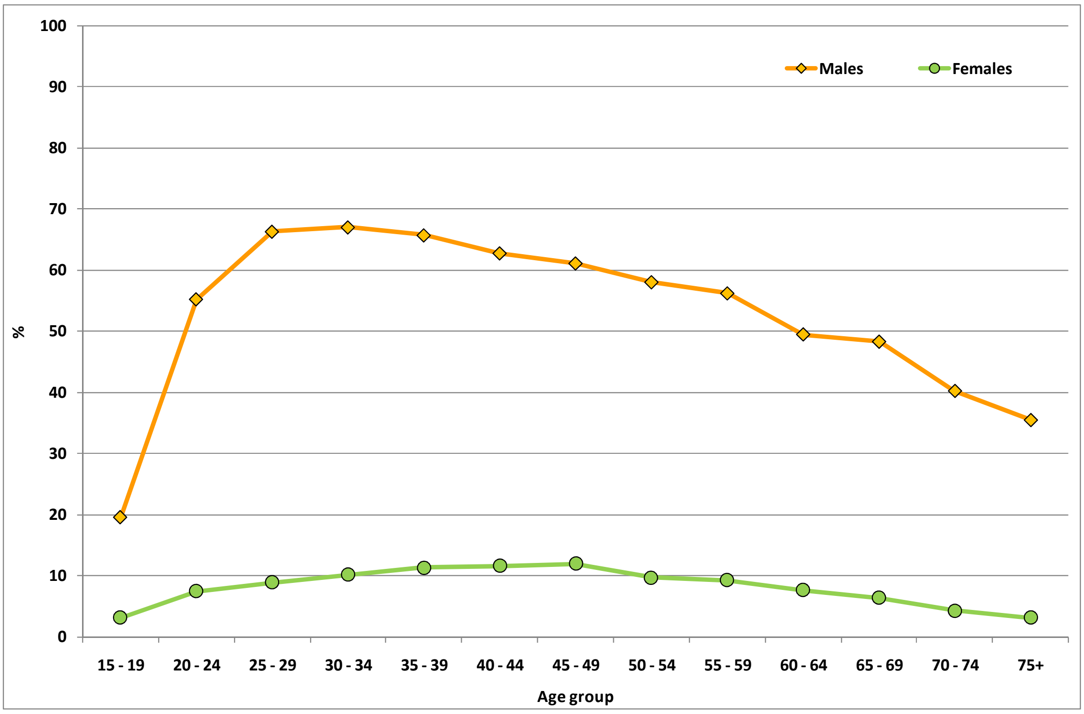


Figure 80: Proportion of the population 15 years and older by age and sex who drink kava (%), Vanuatu: 2009



4.5 Educational characteristics

The Ministry of Education has made considerable progress towards achieving universal primary education. As a result of broad consultation processes and the SWA (Sector wide approach) used in developing the Vanuatu Education Sector Strategy 2007-2016, the Ministry of Education realigned its priorities towards universal primary education and literacy.

Constraints for universal primary education identified during this process were the costs of maintaining the dual education system with separate streams for 'English' and 'French' as the language of instruction and the need to achieve an integrated system of bilingual schools.

A concerted effort with development partners to provide 'fee free' primary level education up to Year 6 in Government and Government-assisted schools began in some areas in 2009 and achieved full coverage in 2010. Compulsory primary school contributions have been phased out and replaced by grants paid directly to the schools. This was in direct response to declining primary enrolment rates which were around 95% in 2005 but decreased to 80% in 2008; and subsequent research highlighted rising parental contributions (school fees) as one of the main reasons why enrolment rates were falling. The education system consists of preschool (aged 3 to 5 years), primary (aged 6-13 years or Year 1 to 8) and secondary school (Year 9 to 13 or Year 14 in some French schools). There are still some junior secondary schools offering Years 7 and 8 that will be phased out and absorbed into primary level education.

4.5.1 School enrollment

At the time of the census, 61,931 people of the total enumerated population 5 years and older were enrolled in schools; 32,337 males and 29,594 females. Of these, 58,989 people were enrolled full time and 2,942 were part time enrolled in an educational institution.

The distribution of those attending a school by school level is shown in Table 37. This Table excludes students boarding in dormitories.

Table 37: Population* 5 years and older by sex and enrolled in school by school level attending, Vanuatu: 2009

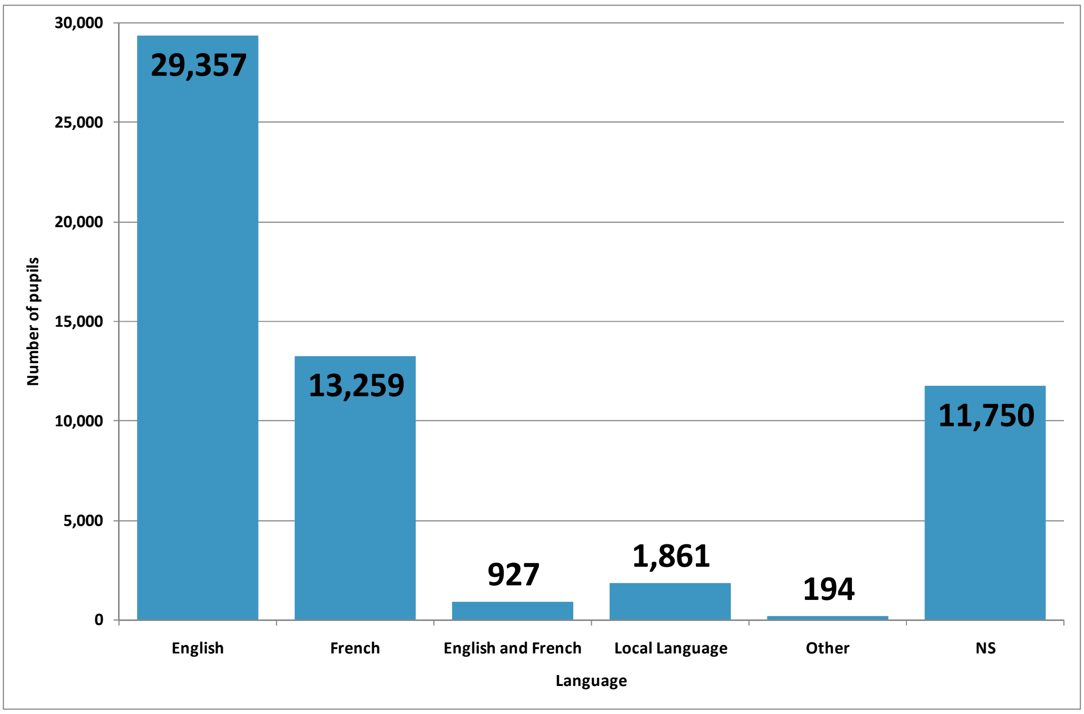
School level	Total	Males	Females
Pre school	5,953	3,131	2,822
Primary	42,323	22,317	20,006
Secondary	6,800	3,424	3,376
Tertiary	1,527	791	736
Vocational	413	235	178
Other	332	167	165
Total	**57,348**	**30,065**	**27,283**

*refers to population living in private households only

Three quarters of all students (42,323) were enrolled in primary schools, 12% in secondary schools (6,800) and 10% in Pre schools (5,953). Only 413 students attended a vocational institution.

With respect to the main language spoken at the educational institutions, slightly more than half (51%) of all students attended English speaking schools (29,357), and 23% attended French speaking schools (13,259). Unfortunately about 20% (11,750) of all students did not state or know the main language spoken at their school (Fig. 81).

Figure 81: Population* 5 years and older by sex and enrolled in school by main language of educational institution, Vanuatu: 2009



*refers to population living in private households only

There were insignificant differences between male and female enrollment rates for students aged 5-17. From the age of 18 school enrollment rates for males were slightly higher than females' (Fig.82). Not at any age were more than 90% of children enrolled in schools, which means that more than 1 in 10 children has never been to school. The highest school enrollment rates were for the 8-11 year olds when almost 90% of children were in school. From the age of 12, school enrollment rates rapidly decrease, and at age 16 years only just over half of children were still in school.

Apart from the relatively large proportion of young people that had never been to school of about 5% of all teenagers (Fig.83), it is a worry that even at young ages of 8-12 years children start leaving school, and at age 13 almost 15% of children had already left school (Fig. 84).

With respect to the population aged 6-13 years, 86% were enrolled in school, 6% had already left school, and 8% had never been in school. The percentage distribution is about the same for males and females. However, there were marked differences in school enrollment rates by place of residence (Fig.85). School attendance was significantly higher in the urban (91%) than the rural areas (85%), and Tafea had by far the lowest enrollment rates of the 6-13 year olds. Only three-quarter were enrolled in school, and 20% had never been to school. On the other hand, Malampa had the highest enrollment rates of 6-13 year olds with 91%, and only 4% had never been to school.

Figure 82: Proportion of the population aged 5-24 years by age and sex enrolled in school (%), Vanuatu: 2009

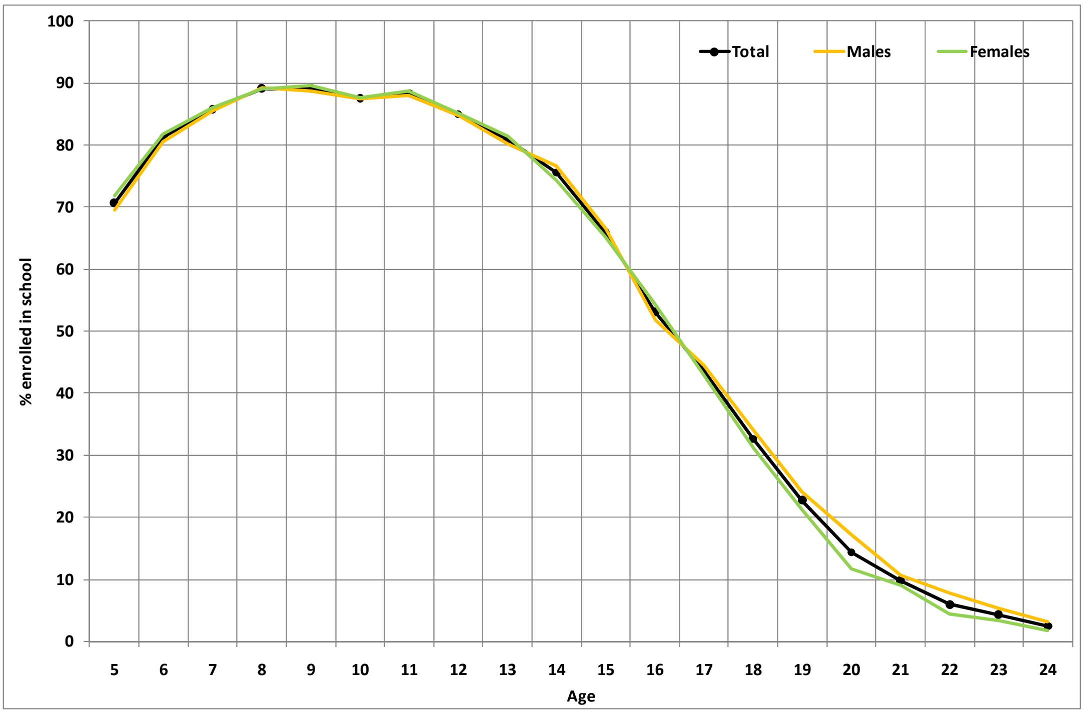


Figure 83: Proportion of the population aged 5-24 years by age and sex who left school (%), Vanuatu: 2009

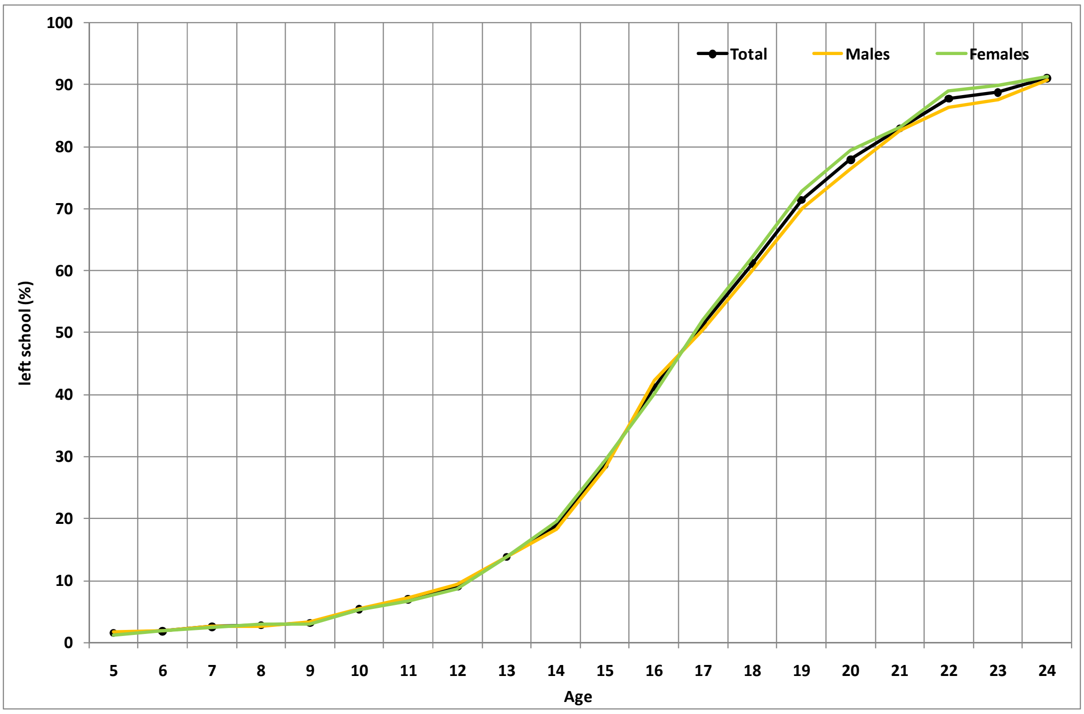


Figure 84: Proportion of the population aged 5-24 years by age and sex who have never been to school (%), Vanuatu: 2009

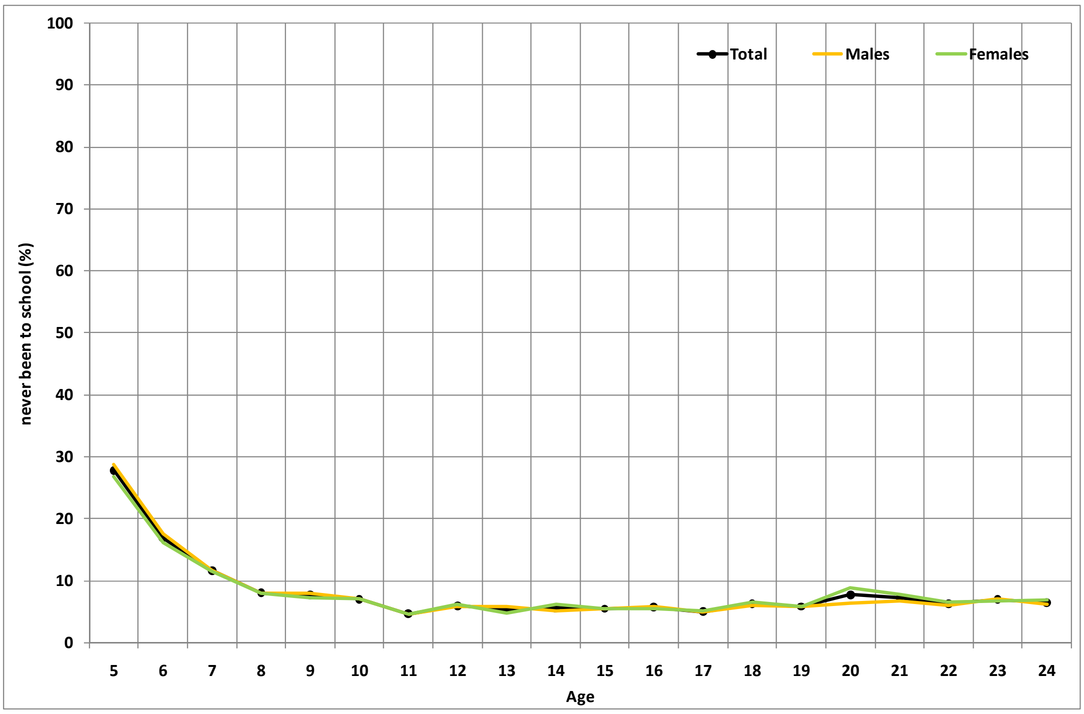
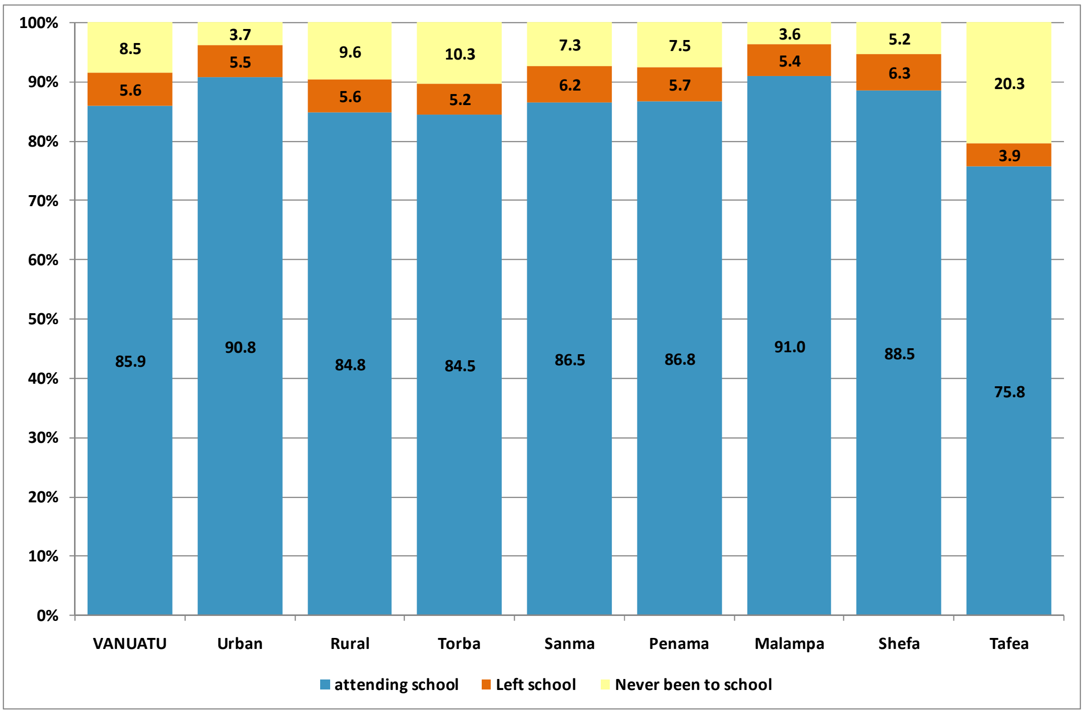


Figure 85: Proportion of the population aged 6-13 years by sex and school attendance status (%), Vanuatu: 2009



4.5.2 Educational attainment

Based on data on the highest level of education completed, 26% of males and 24% of females 15 years and older responded that they had completed secondary education (Form 3 certificate, Year 10 leaving certificate, Senior secondary certificate or University entrance). About 48 % completed only primary level and 16% of the population 15 years and older had never been to school or only visited preschool; 14% of males and 18% of females. Four per cent of males and three per cent of females had tertiary education (Figs.86 and 87).

As can be expected, educational levels were much higher in the urban than the rural areas. The proportion of the population 15 years and older living in the urban areas that completed secondary education was 43% compared to only 18% in rural areas. On the other hand, the proportion of the population with no education (never been to school or only preschool level) was 20% in the rural areas compared to 5% in the urban areas.

The proportion of the population with no education was particularly high in Tafea (39%), followed by Torba (25%).

Shefa with the urban centre Port Vila had the highest proportion of the population (35%) with secondary education, followed by Sanma with 24%.

Figure 86: Population 15 years and older by sex and highest level of education completed, Vanuatu: 2009

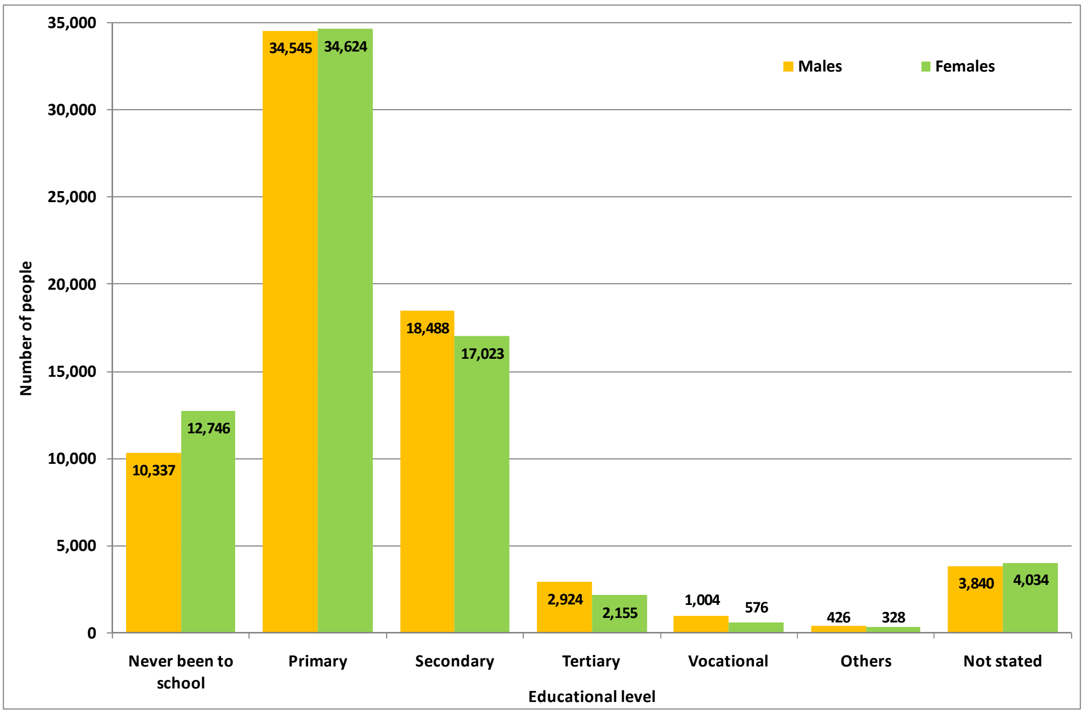
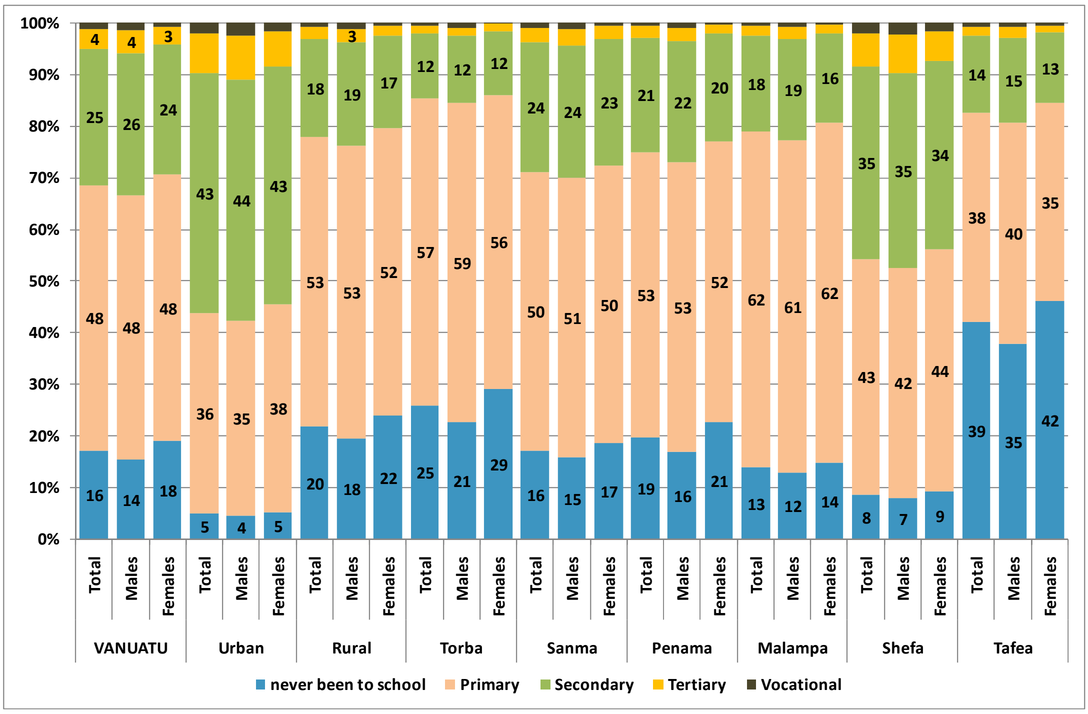


Figure 87: Population 15 years and older by sex, place of residence and highest level of education completed, Vanuatu: 2009



4.5.3 Literacy and language ability

Literacy was measured by a respondent's ability to read and write a simple sentence in one or more of the following languages: English, French, Bislama, or any other language including local languages.

Between ages 10-34 years, slightly more than 90% of the population was literate. From the age of 35 literacy rates gradually decline with increasing age of the population. While only 80% of the population aged 55-59 were literate, it was only 60% of the population 70 years and older (Fig.88).

The literacy rate of 15–24 year-olds was 92% and 93% for males and females, respectively (Fig.89)

While almost everybody of the 15-24 year olds in the urban areas was literate, it was less than 90% in the rural areas. The provinces of Torba and especially Tafea had significantly lower literacy rates than the national average.

Literacy in terms of language abilities are shown in Figures 90-94. Not surprisingly Bislama was most widely spoken by 74% of the population 5 years and older; it was followed by English with 64%, other (local) languages (50%), and French with 37%. Language abilities varied extensively by place of residence. Language abilities in any language were much higher in the urban than the rural areas. Otherwise Bislama was most widely spoken in Shefa, Malampa and Sanma. English was also popular in Shefa, followed by Sanma and Penama, local languages were common in Shefa and Penama, and French speakers were proportionately more widespread in Shefa and Malampa than in other provinces.

All languages shared a common feature which is that the proportion of young speakers aged 5-14 was relatively low, the ability to speak any language decreased sharply after the age of 50 years, and language abilities of males – especially older males – was higher than that of females (Figs.91-94).

Figure 88: Literacy rate of the population 5 years and older by sex (%), Vanuatu: 2009

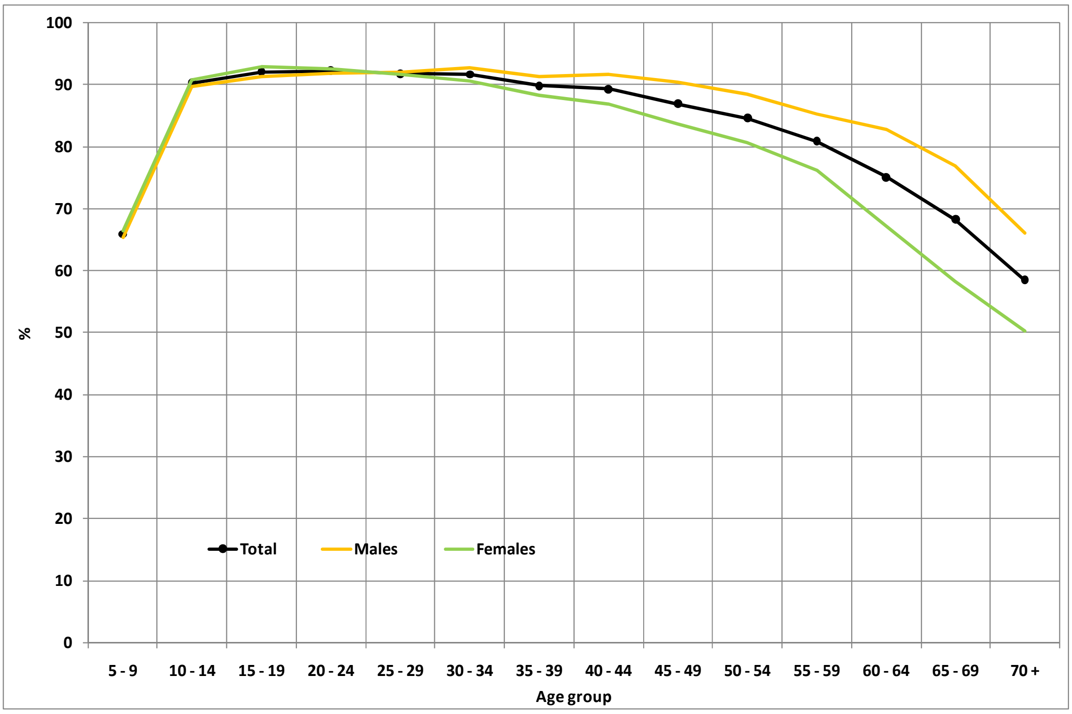


Figure 89: Literacy rate of the population aged 15-24 years by sex and place of residence (%), Vanuatu: 2009

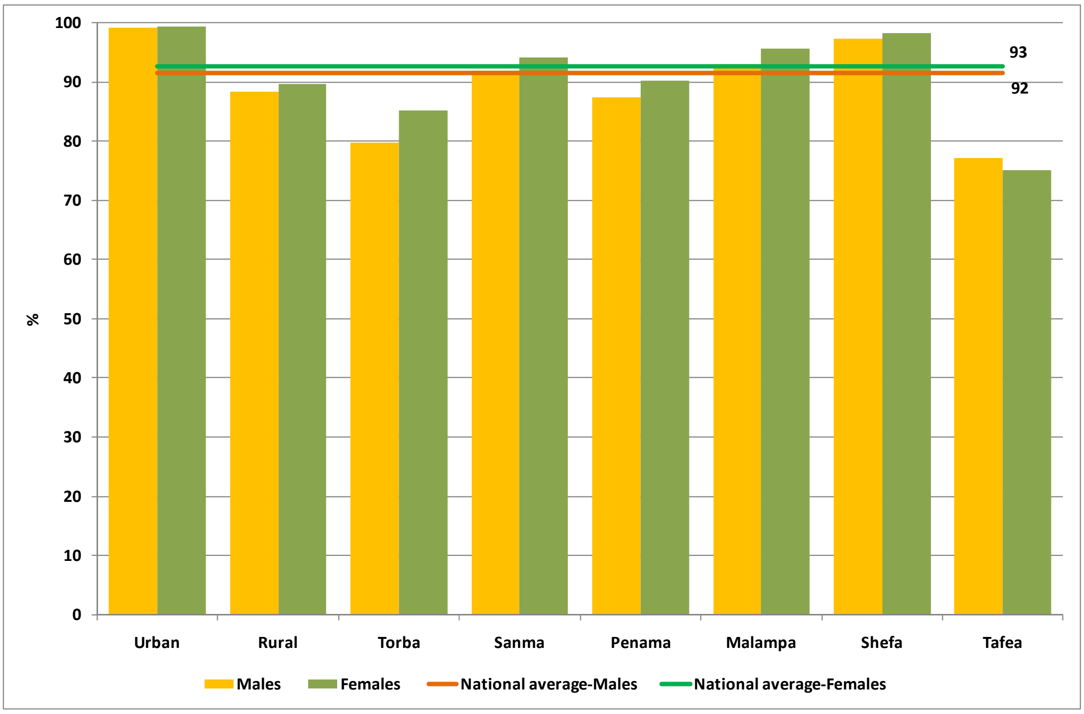


Figure 90: Language ability of the population 5 years and older by sex (%), Vanuatu: 2009

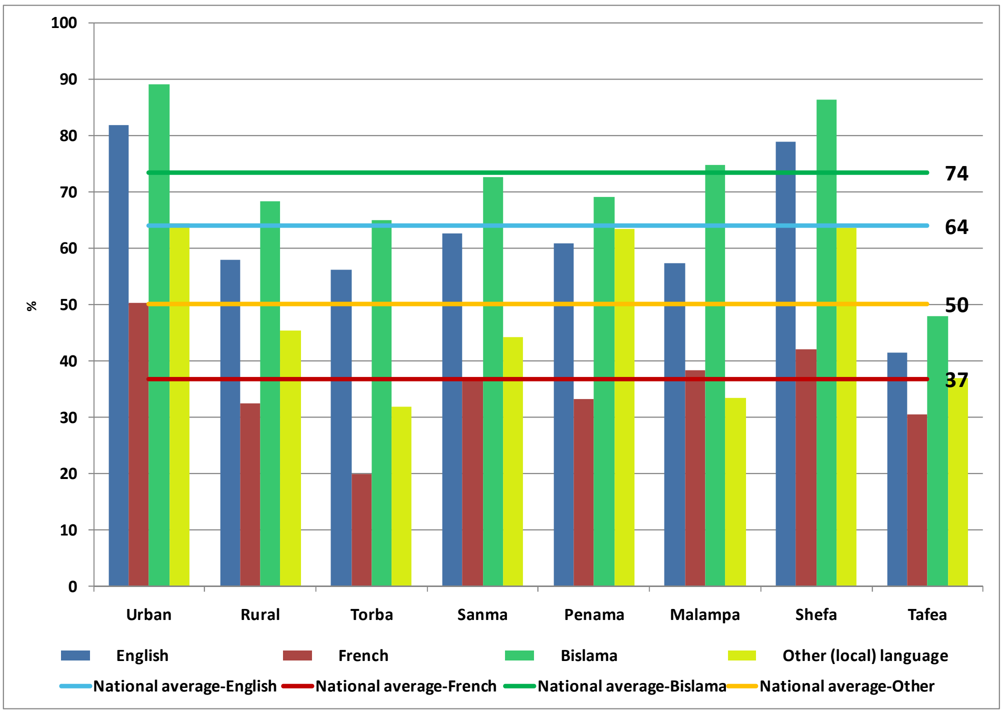


Figure 91: English language ability of the population 5 years and older by sex (%), Vanuatu: 2009

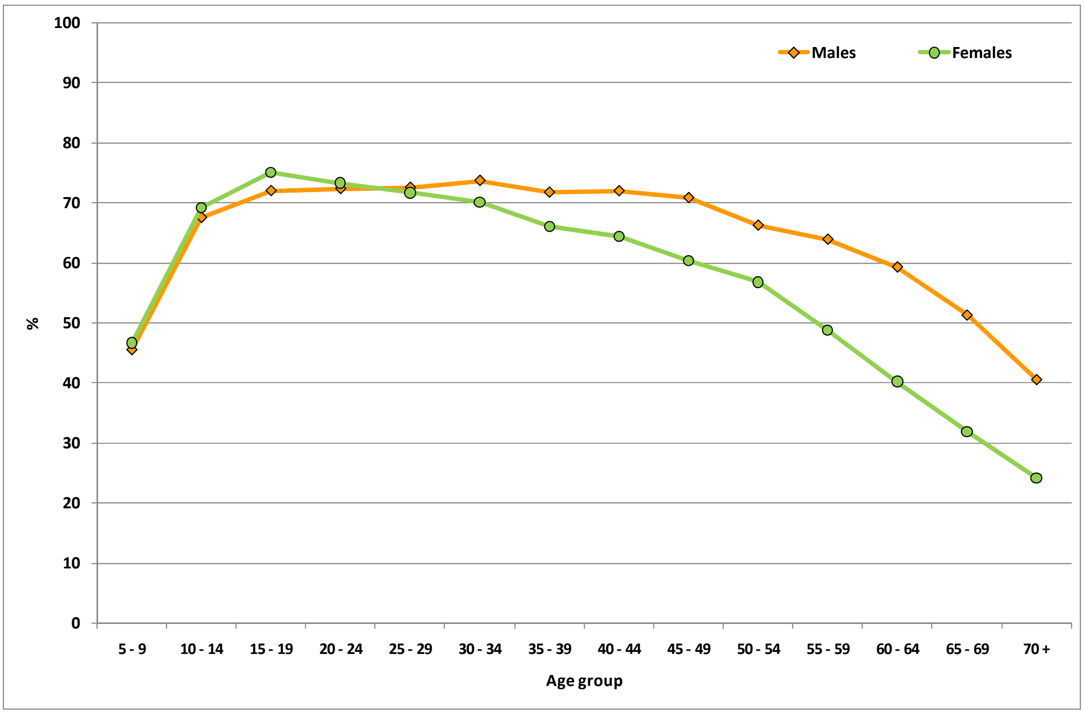


Figure 92: French language ability of the population 5 years and older by sex (%), Vanuatu: 2009

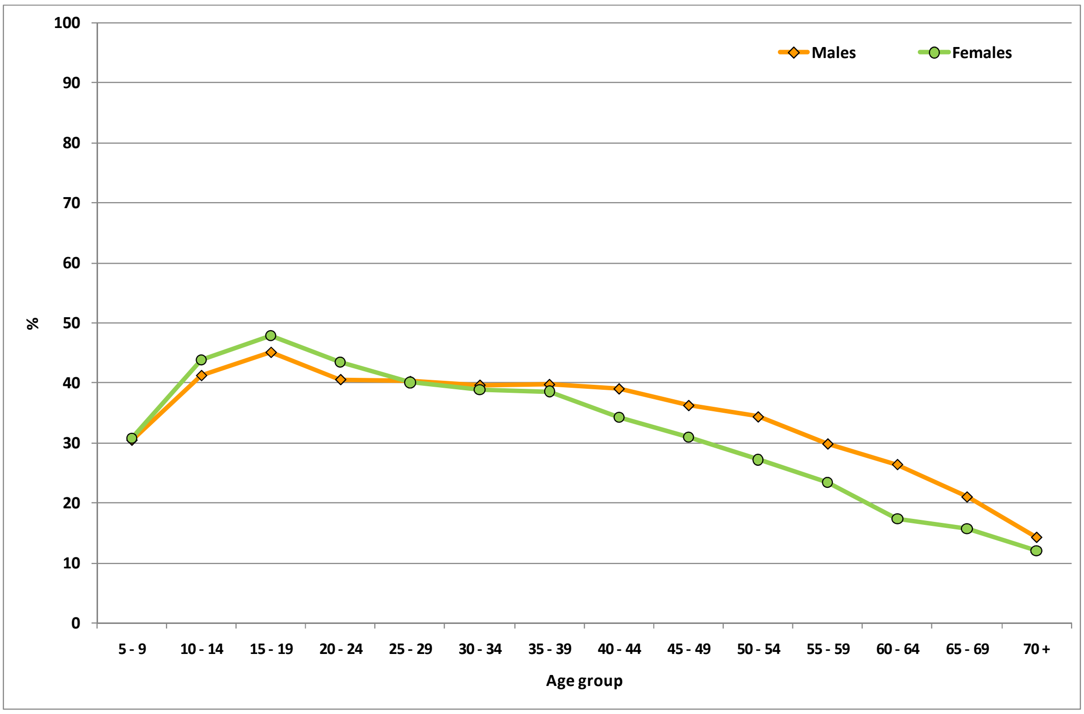


Figure 93: Bislama language ability of the population 5 years and older by sex (%), Vanuatu: 2009

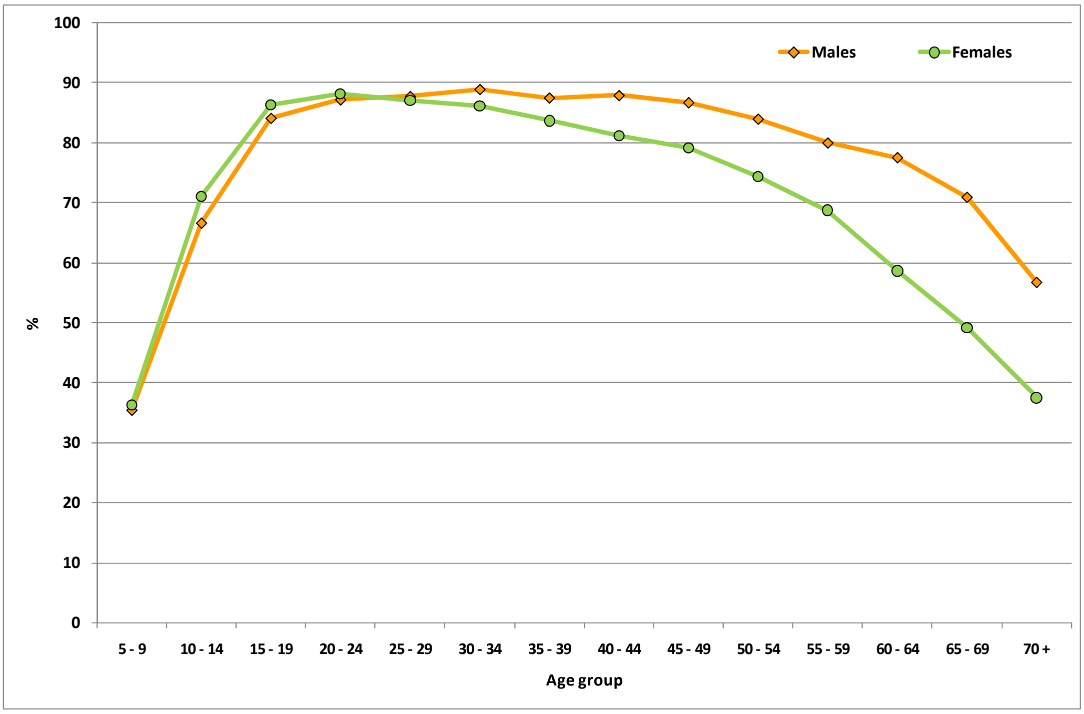
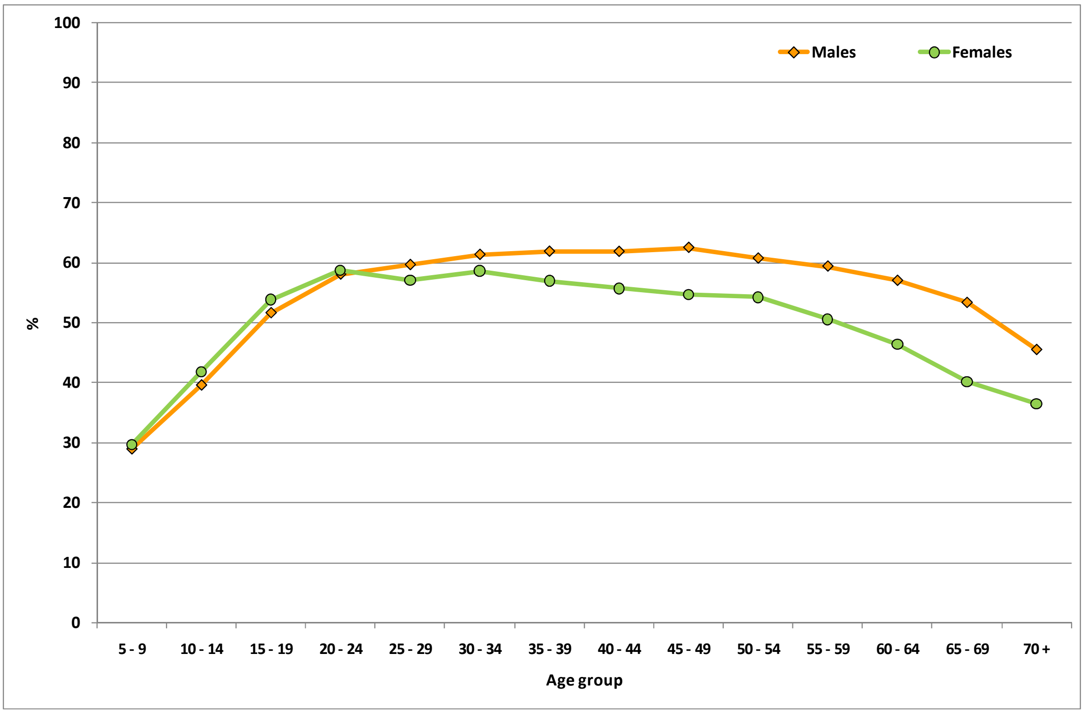


Figure 94: Other language ability of the population 5 years and older by sex (%), Vanuatu: 2009



4.6 Internet use

The 2009 census questionnaire included a question on internet use during the week before the census of the population 15 years and longer. Only 9,290 (6.7%) of all respondents said that they used the internet; 5,063 males and 4,227 females.

It was mainly the 20-49 year old population who used the internet, although the highest proportions of users were among the 40-44 year old males and 20-24 year old females (Fig.95).

As can be expected, internet use was much more common in the urban areas where 16.3% of the population used the internet compared to 3% of the rural population (Fig. 96).

The highest use of the internet was in the province of Shefa where almost 14% used the internet, and the province with the lowest use was Torba, where internet use was less than 1%.

Figure 95: Proportion of the population 15 years and older by sex using the Internet, Vanuatu: 2009

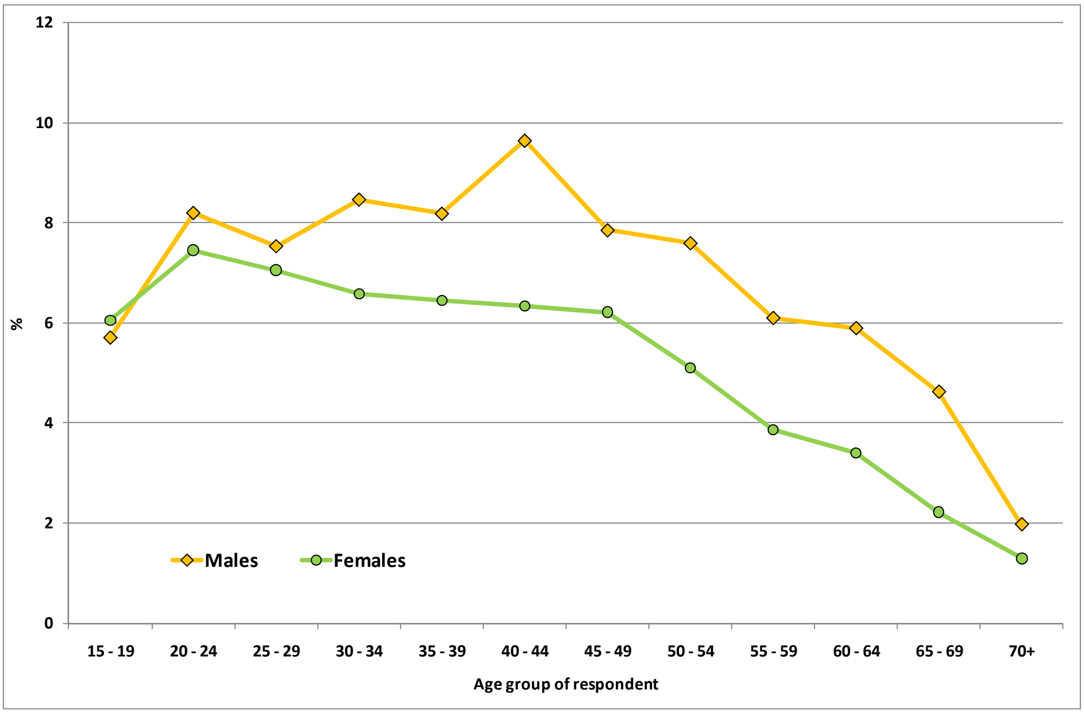
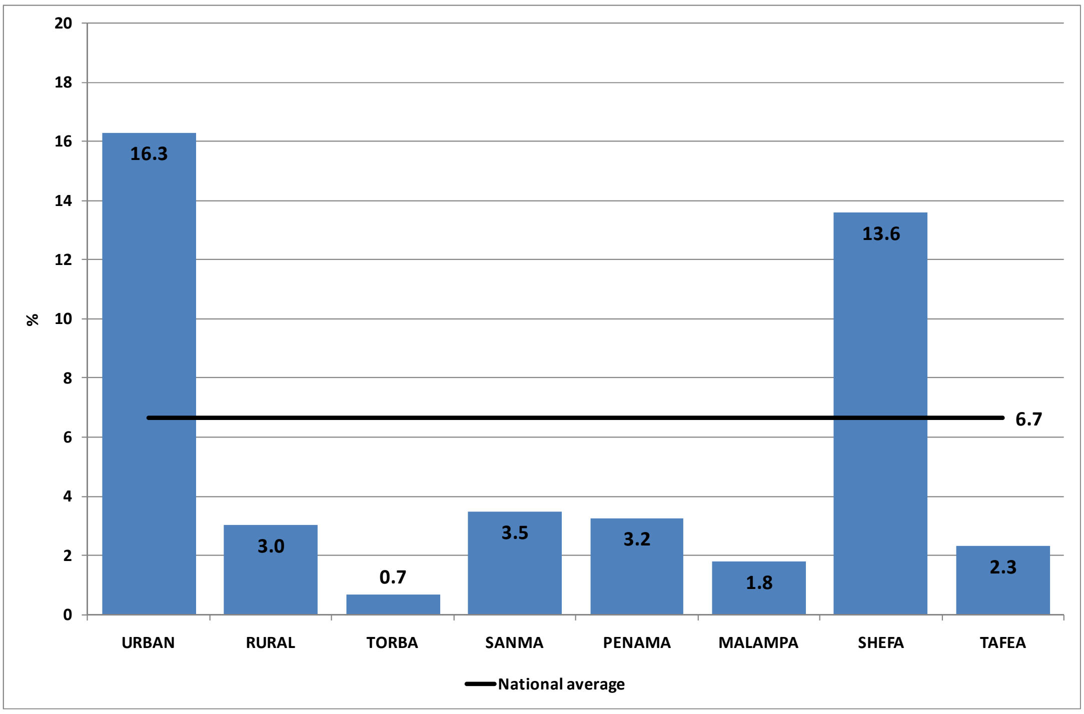


Figure 96: Proportion of the population 15 years and older by place of residence using the Internet, Vanuatu: 2009



4.7 Labour market activity

4.7.1 Introduction

In Vanuatu, the 2009 census included a question on labour market activity. Enumerators were instructed to ask each respondent aged 15 and over whether they worked during the last week. Work was defined as any activity concerned with providing the necessities of life. It did not matter whether or not the person had a job or was paid for what they did. Based on these criteria, respondents were coded on the questionnaire into the four mutually exclusive categories of:

- Work for pay;
- Work to support the household by producing goods mainly for sale;
- Work to support the household by producing goods mainly for own consumption;
- Voluntary work or unpaid family work.

A person who "*works for pay*" is someone who worked for wages, salary, commission, or had a contract, or was operating a business. The person was either a government or private employee, an employer, or was self-employed. It also includes persons that did "*work to support the household by producing goods mainly for sale*" performing a variety of tasks such as farming, gardening, fishing or producing handicrafts mainly for sale.

A person that did "*work to support the household by producing goods mainly for own consumption*", performed a variety of tasks such as farming, gardening, fishing or producing handicrafts for their own consumption and are subsequently described as subsistence workers.

A person that did "*voluntary work*" or "*unpaid family work*" is someone who worked but did not receive a wage, salary, commission, and did not have a contract.

The UN publication "Principles and Recommendations for Population and Housing Censuses, Revision 2", recommends that "persons engaged in economic activities in the form of own-account production of goods for own final use within the same household should be considered to be self-employed." Certainly, those selling their products should also be classified as employed. According to this definition, all people classified as subsistence workers are considered to be employed.

The "non-labor force" category applies to those people who did nothing in the reference week (i.e. the week prior to the census) to provide for themselves or their families or household. This includes people engaged in home duties, who were retired, disabled, students, the unemployed and those who did "not want to work" or did not work because "the weather or transport problems" prevented them from working, or for they did not work for "other" reasons.

People classified as unemployed:

- did not work in the week prior to the census (other than those who had a job but were not at work during the reference week), but
- spent some time looking for work, and
- were available to work if a job was offered to them.

If the person did not work and did not spend some time looking, or looked for work but was not available for work, they were then classified as economically inactive (not in the labor force).

Based on the above, data collected from the Vanuatu census have been assigned to the three categories of:

- **employed** (those that "work for pay" or "work to support the household by producing goods mainly for sale" or "work to support the household by producing goods mainly for own consumption", and those doing "voluntary work", or "unpaid family work");
- **unemployed** (see definition above);
- **not in the labour force** (those not employed or unemployed).

Optional definitions of unemployment are also provided below.

4.7.2 Economic activity

The total labor force of 98,978 people is defined as those being employers (1,369) or self employed (15,920), employees (25,006), those that did unpaid work (10,288), subsistence work (41,877) and the unemployed (4,518) (Figs.97 and 98, and App.21).

The paid employed people are defined as those who "work for pay" and "work to support the household by producing goods mainly for sale". The total number of paid employed people consisted of 42,295 people, 25,916 (61%) males and 16,379 (39%) females. From an urban–rural perspective, 18,016 (43%) of the paid workers were in the urban areas (Port Vila and Luganville), and 24,279 (57%) held paying jobs in rural areas.

The non-labor force of 40,664 people is defined as those being full time students (9,008), those engaged in home duties (17,840), the retired (4,480), the disabled (581), and all those who did not work and were not unemployed (did not look for and were not available for work) for various reasons (8,755).

From the urban-rural divide (Fig.98) it is apparent that most employees for wage or salary can be found in the urban areas, while the overwhelming majority of subsistence workers live in the rural areas. This pattern is furthermore clearly illustrated by comparing the number of people by labor market activities of the different provinces (Figs.99-104). The only province with more people being employees than people in the substance sector is the province Shefa, with the location of the main urban and administrative center Port Vila.

Another general pattern is the fact that there are more males than females in the labor force categories, while there are almost 5-times more females engaged in home duties than males.

Figure 97: Population aged 15 and older by sex and labour market activity, Vanuatu: 2009

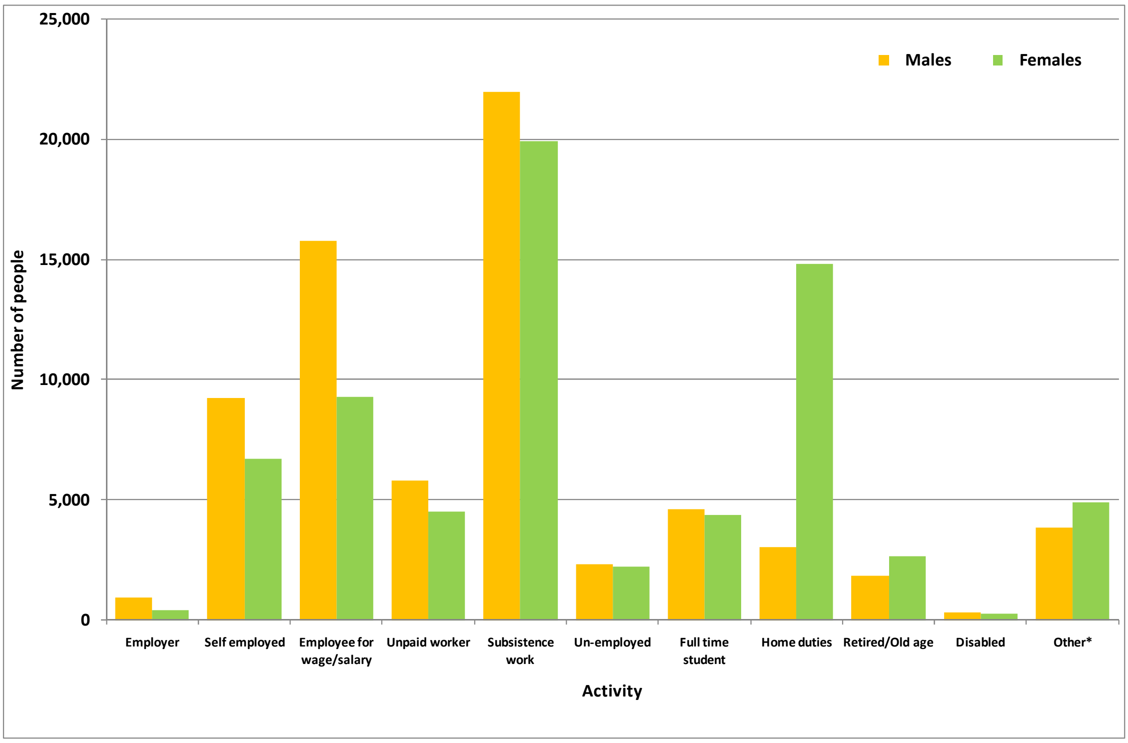


Figure 98: Population aged 15 and older by region and labour market activity, Vanuatu: 2009

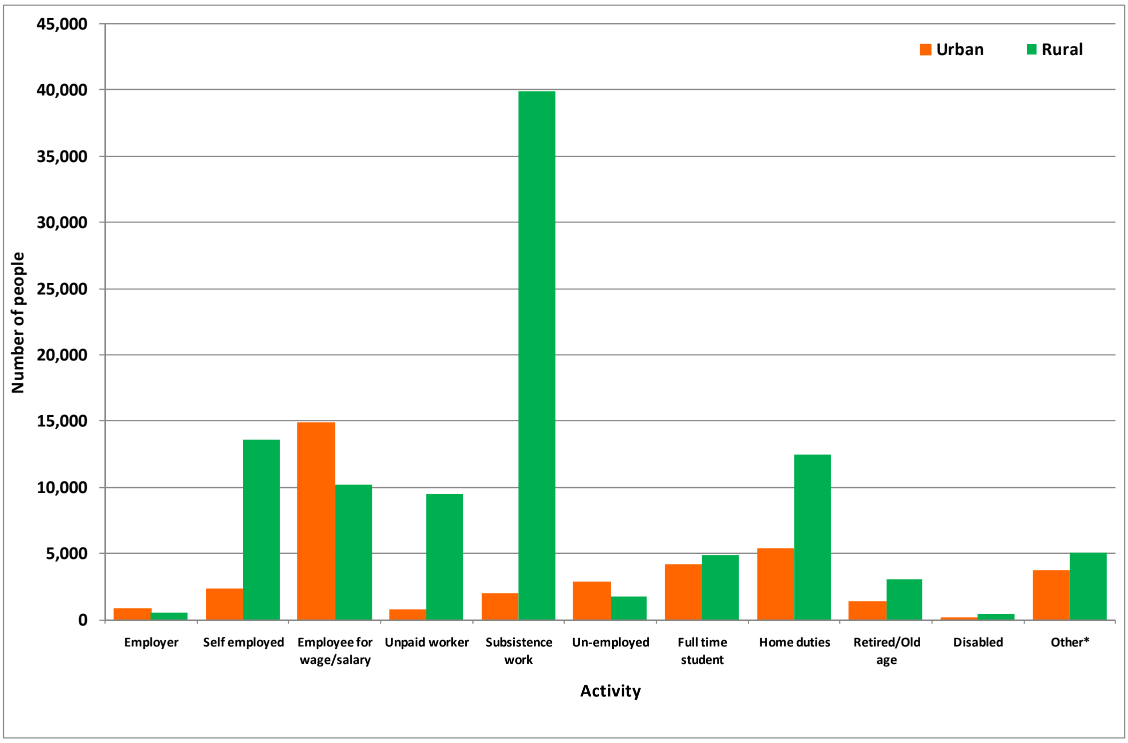


Figure 99: Population aged 15 and older by sex and labour market activity, Torba: 2009

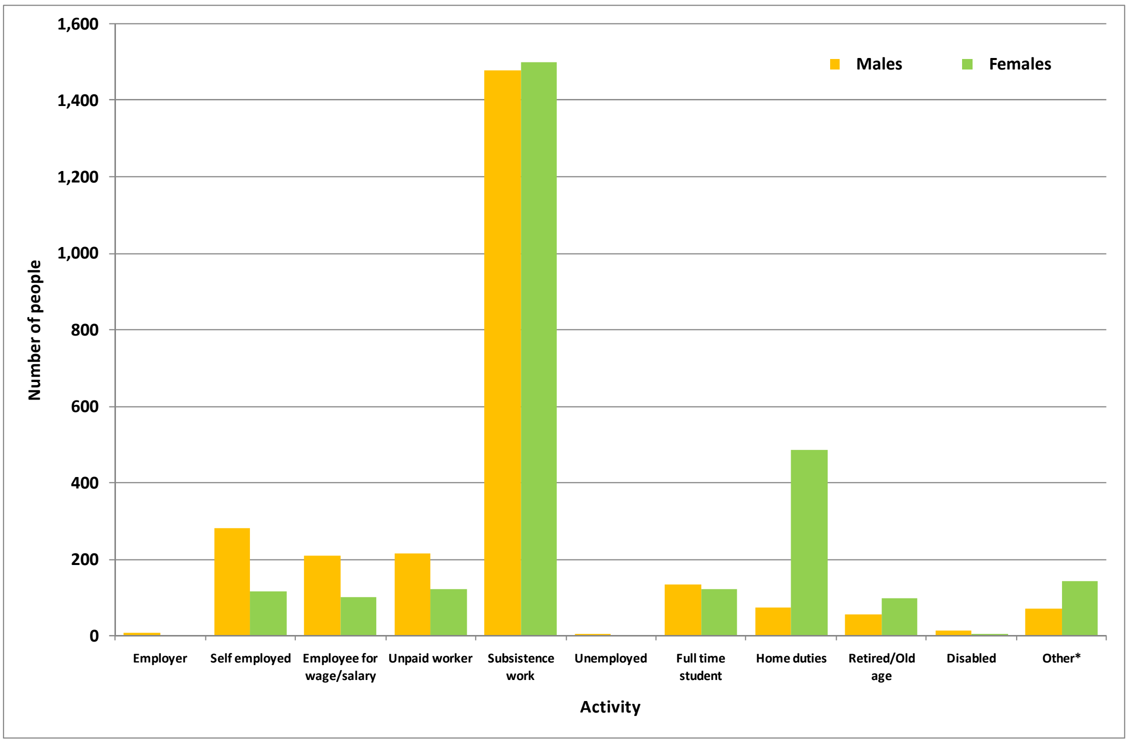


Figure 100: Population aged 15 and older by sex and labour market activity, Sanma: 2009

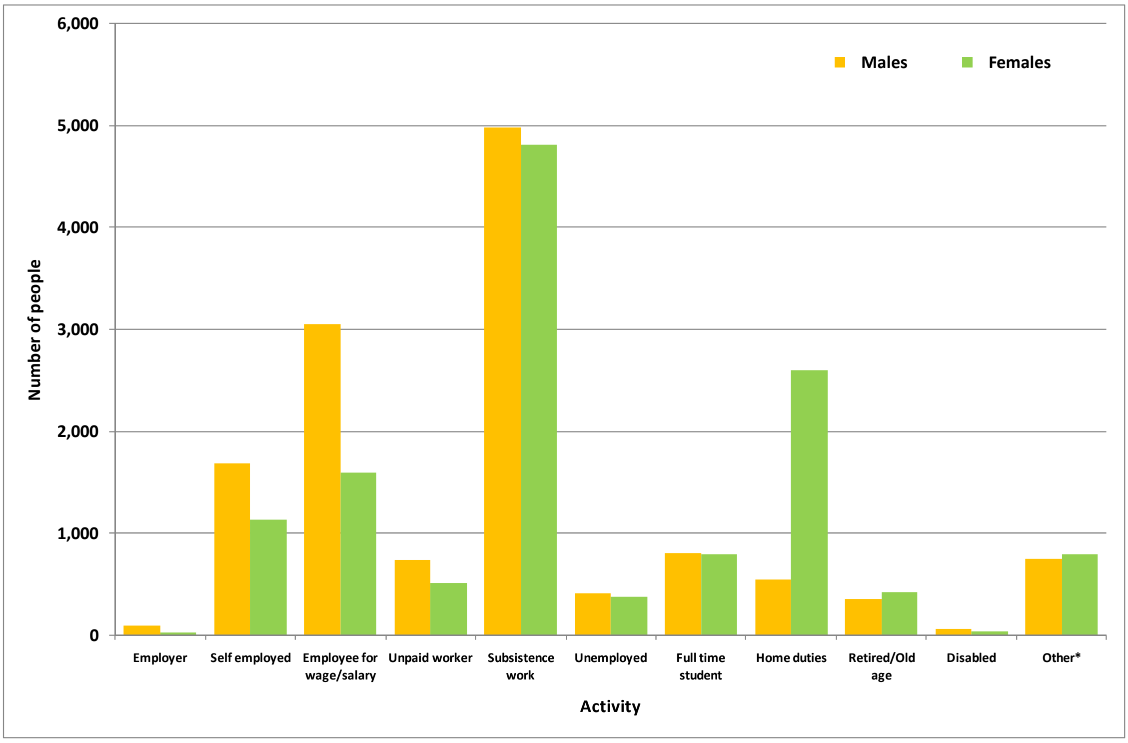


Figure 101: Population aged 15 and older by sex and labour market activity, Penama: 2009

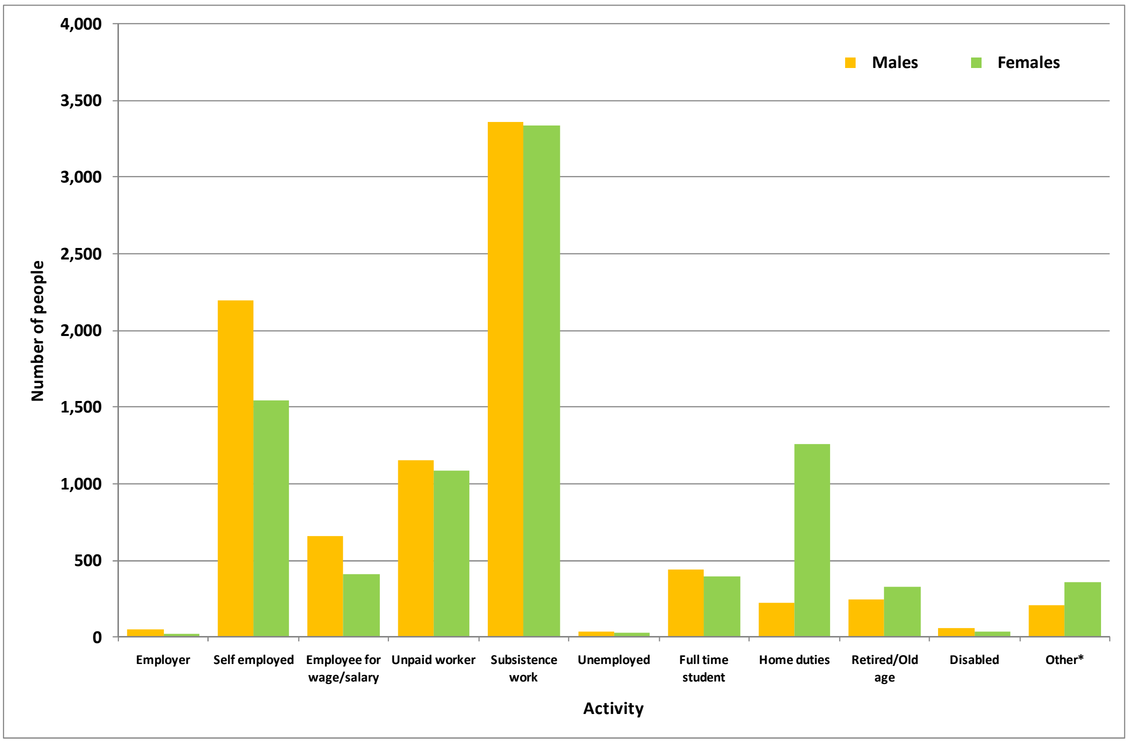


Figure 102: Population aged 15 and older by sex and labour market activity, Malampa: 2009

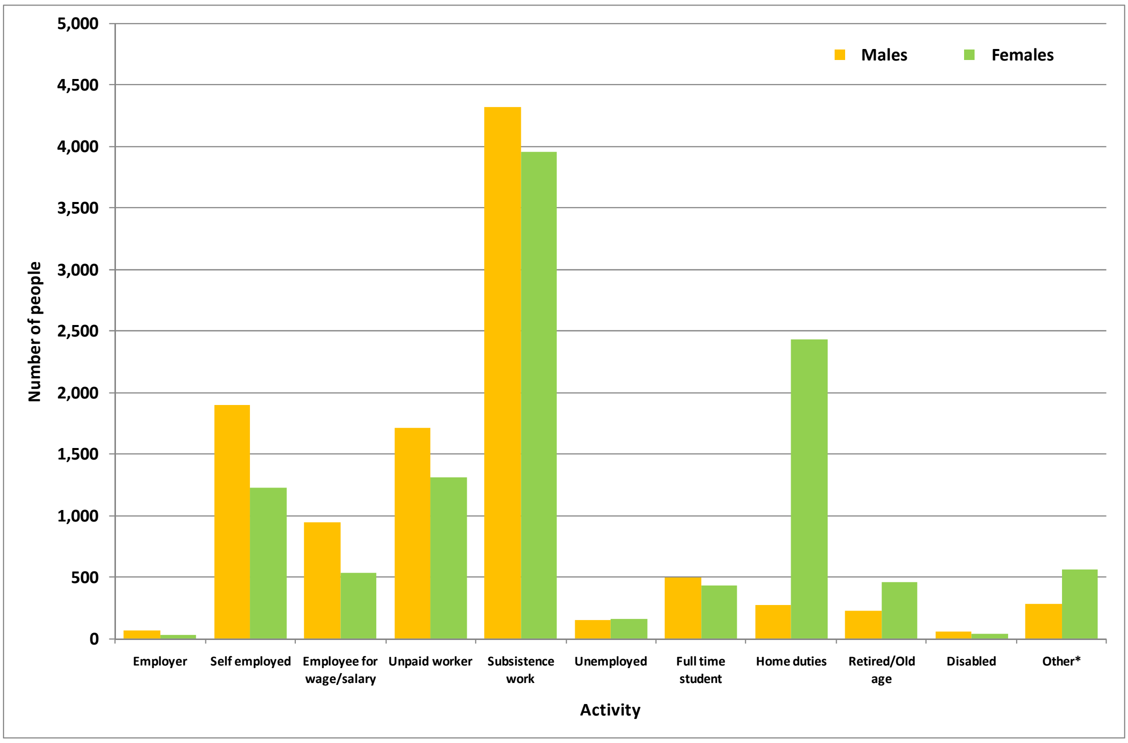


Figure 103: Population aged 15 and older by sex and labour market activity, Shefa: 2009

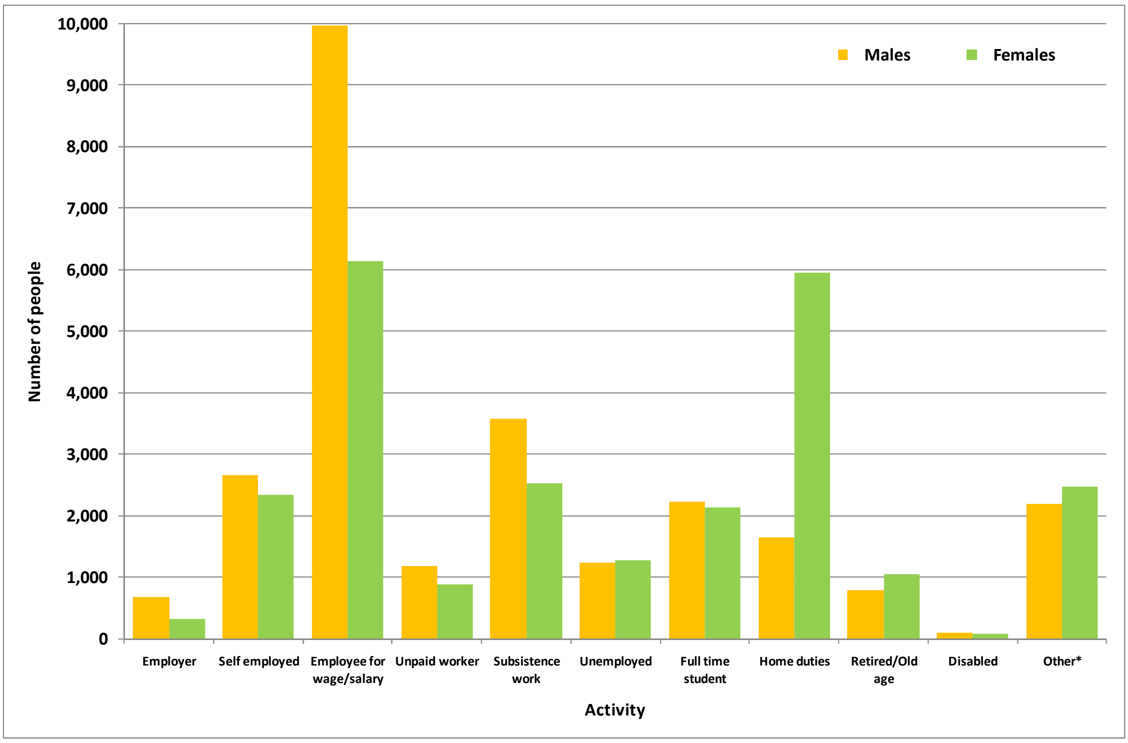
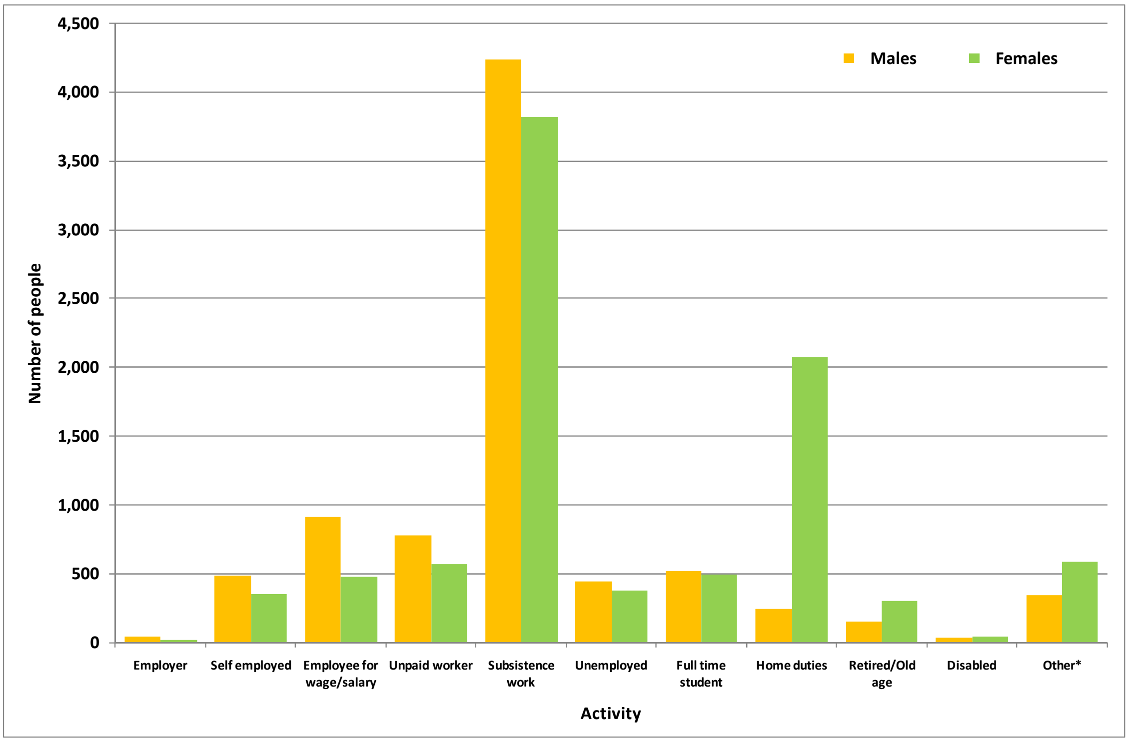


Figure 104: Population aged 15 and older by sex and labour market activity, Tafea: 2009



4.7.3 Labour force participation rate, employment–population ratio, and unemployment rate

The labour force participation rate (LFPR) is the number of people in the labour force by a given age and sex and/or place of rural–urban residence, divided by the corresponding total population with the same characteristics, multiplied by 100.

The employment–population ratio (EPR) is the number of people employed in cash work by a given age and sex and/or place of rural–urban residence, divided by the corresponding total population with the same characteristics, multiplied by 100.

The unemployment rate is the number of people unemployed by a given age and sex and/or place of rural–urban residence, divided by the population in the labor force with the same characteristics, multiplied by 100.

The LFPR is calculated at 70.9% in Vanuatu in 2009. At the same time the EPR was only 30.3%, and the unemployment rate for Vanuatu was 4.6% (Fig.105-107 and Table 38).

The LFPRs were higher for males (80.4) than for females (61.4), so was the employment-population ratio with 37.2 and 23.4 for males and females respectively. The pattern of higher male than female LFPRs and EPRs can be observed in all regions of Vanuatu.

From an urban–rural perspective, the LFPR were higher in the rural than urban areas, and the EPR were about twice as high in the urban than the rural areas. Torba was the province with the lowest EPR and Shefa had the highest EPR.

The unemployment rates were higher for females than males, and considerably higher in the urban than the rural areas. The lowest unemployment rates were in Torba and Penama, and the highest in Shefa.

Figure 105: Population aged 15 and older by sex and labour force participation rate: Vanuatu: 2009

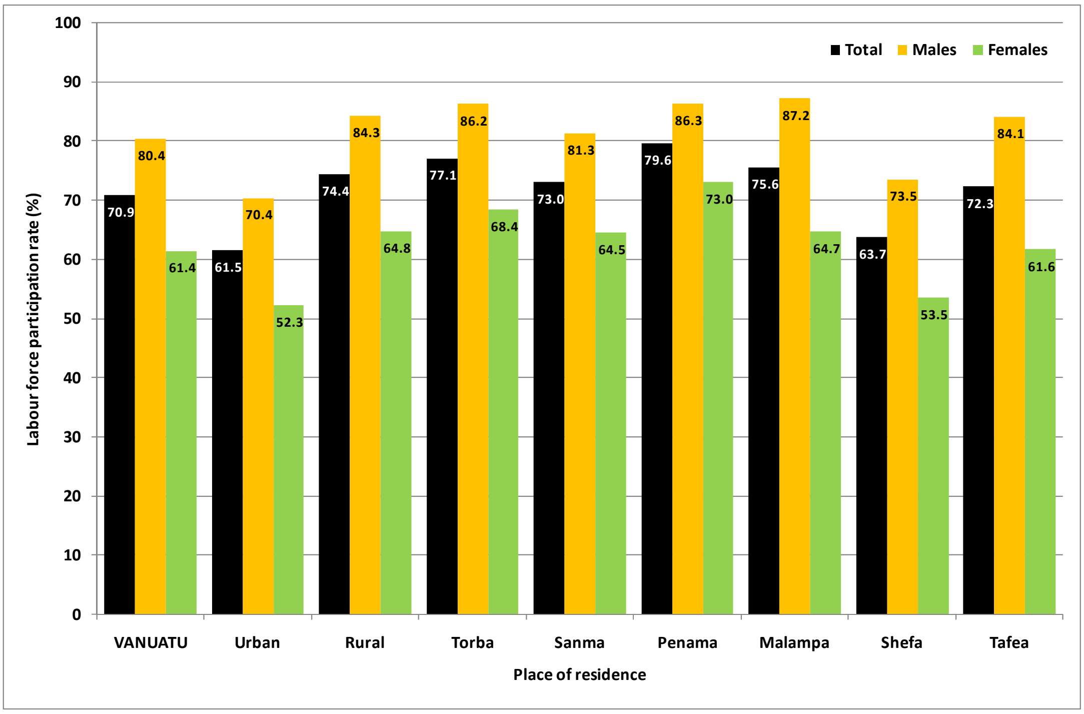


Figure 106: Population aged 15 and older by sex and employment–population ratio: Vanuatu: 2009

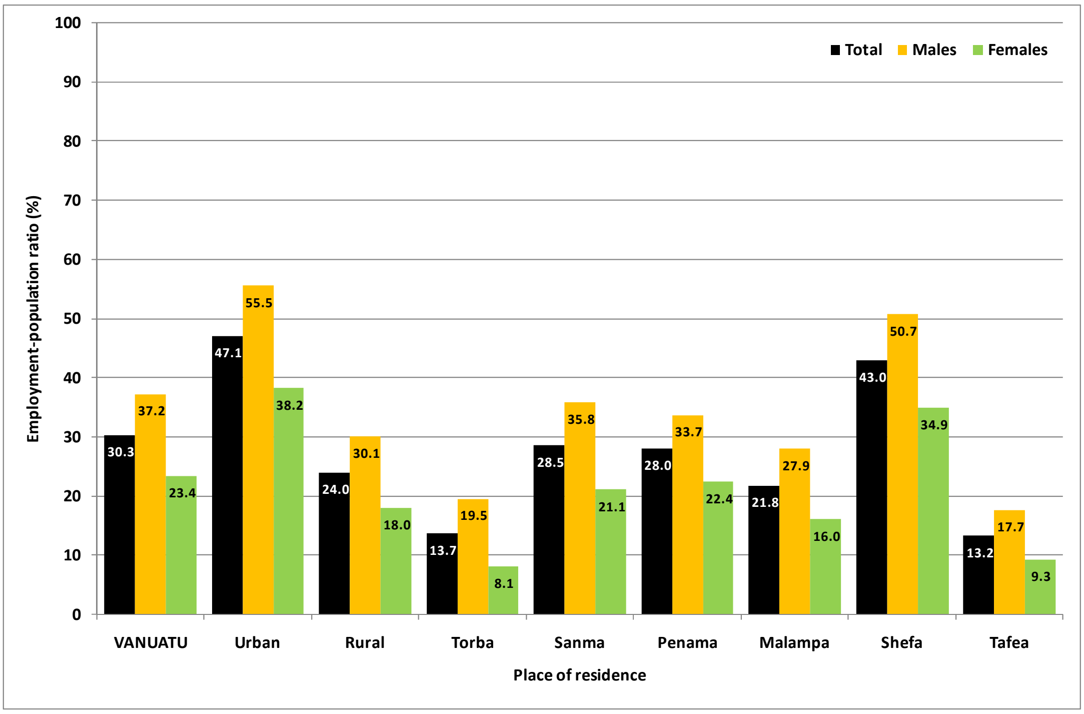


Figure 107: Population aged 15 and older by sex and unemployment rate: Vanuatu: 2009

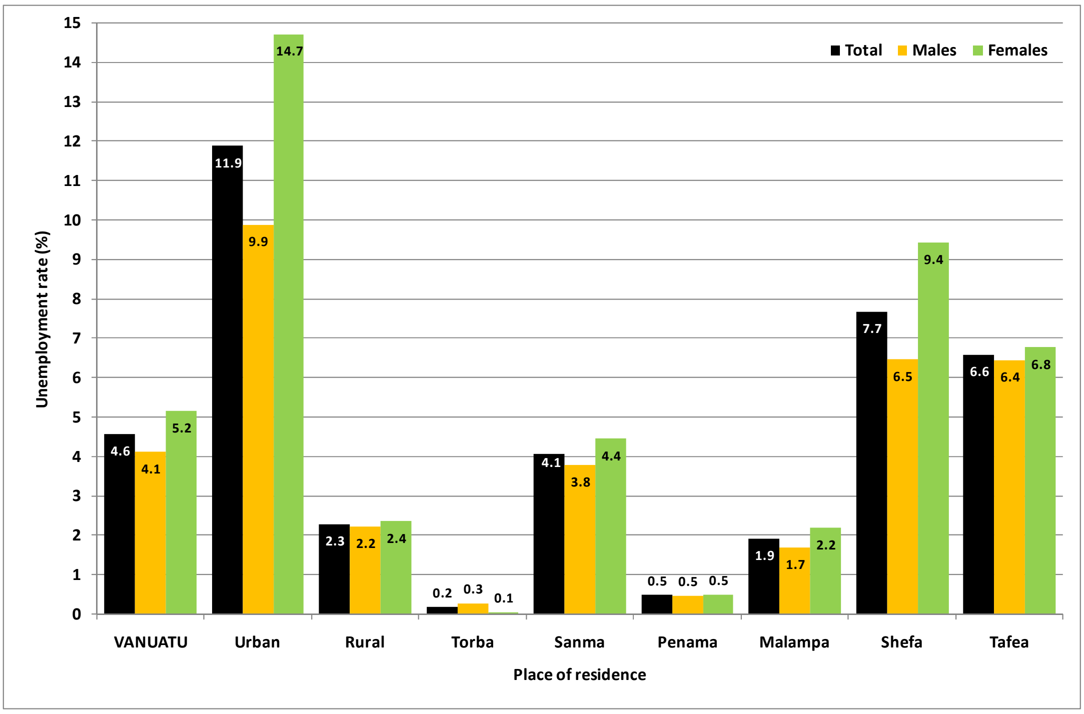


Table 38: Population aged 15 and older by sex, place of residence, labour force participation rate, employment–population ratio, and unemployment rate, Vanuatu: 2009

Residence/Sex	Labour force participation rate	Employment-population ratio	Unemployment rate a	Unemployment rate b
Vanuatu	**70.9**	**30.3**	**4.6**	**5.5**
Males	80.4	37.2	4.1	5.1
Females	61.4	23.4	5.2	6.0
Urban	61.5	47.1	11.9	13.4
Males	70.4	55.5	9.9	11.5
Females	52.3	38.2	14.7	16.1
Rural	74.4	24.0	2.3	3.0
Males	84.3	30.1	2.2	2.9
Females	64.8	18.0	2.4	3.0
Torba	77.1	13.7	0.2	0.5
Males	86.2	19.5	0.3	0.7
Females	68.4	8.1	0.1	0.3
Sanma	73.0	28.5	4.1	5.0
Males	81.3	35.8	3.8	4.8
Females	64.5	21.1	4.4	5.3
Penama	79.6	28.0	0.5	0.7
Males	86.3	33.7	0.5	0.7
Females	73.0	22.4	0.5	0.7
Malampa	75.6	21.8	1.9	2.1
Males	87.2	27.9	1.7	1.9
Females	64.7	16.0	2.2	2.3
Shefa	63.7	43.0	7.7	9.4
Males	73.5	50.7	6.5	8.2
Females	53.5	34.9	9.4	11.0
Tafea	72.3	13.2	6.6	7.1
Males	84.1	17.7	6.4	7.0
Females	61.6	9.3	6.8	7.3

a = the unemployed are strictly defined as persons who did not work in the week prior to the census (other than those who had a job but were not at work during the reference week), but spent time looking for work, and were available to work if a job was offered to them.
b = the unemployed include people that did not work, but did not look for work because they believed that no work was available, or because of poor weather conditions, or because they could not afford transportation costs or had other problems with transportation to work

The LFPR, EPR and unemployment rates by age and sex and urban-rural residence are presented in Figures 108-116. The general pattern is low participation rates for the population 15-19 years when many of the teenagers are still attending school, or struggling to enter the labor market, before the rates sharply increase. They reach a plateau at ages 30-54, after which the rates gradually decrease.

It is interesting to see that a large proportion of the population aged 60 years and older was still in the labour force indicating that many older people keep providing economically for themselves and their household/families.

Not surprisingly, the labour force participation rate and the employment–population ratio were higher for males than for females at all ages.

The labour force participation rate for females did not exceed 71% at any age, while that of males was more than 90% at ages 30–49.

In terms of the employment–population ratio, almost 50% of all males at aged 30–49 were employed as paid workers. In contrast, the age groups with the highest percentage of females in paid employment never exceeded 30%.

The unemployment rates show a very different pattern than the LFPR and EPR with the highest unemployment rate for the young job seekers aged 15-19 years. Unemployment rates rapidly decrease with increasing age. The unemployment rates are considerably higher at all ages in the urban than the rural areas, and they are higher for females than for males.

Figure 108: Population aged 15 and older by age, sex and labour force participation rate (LFPR), Vanuatu: 2009

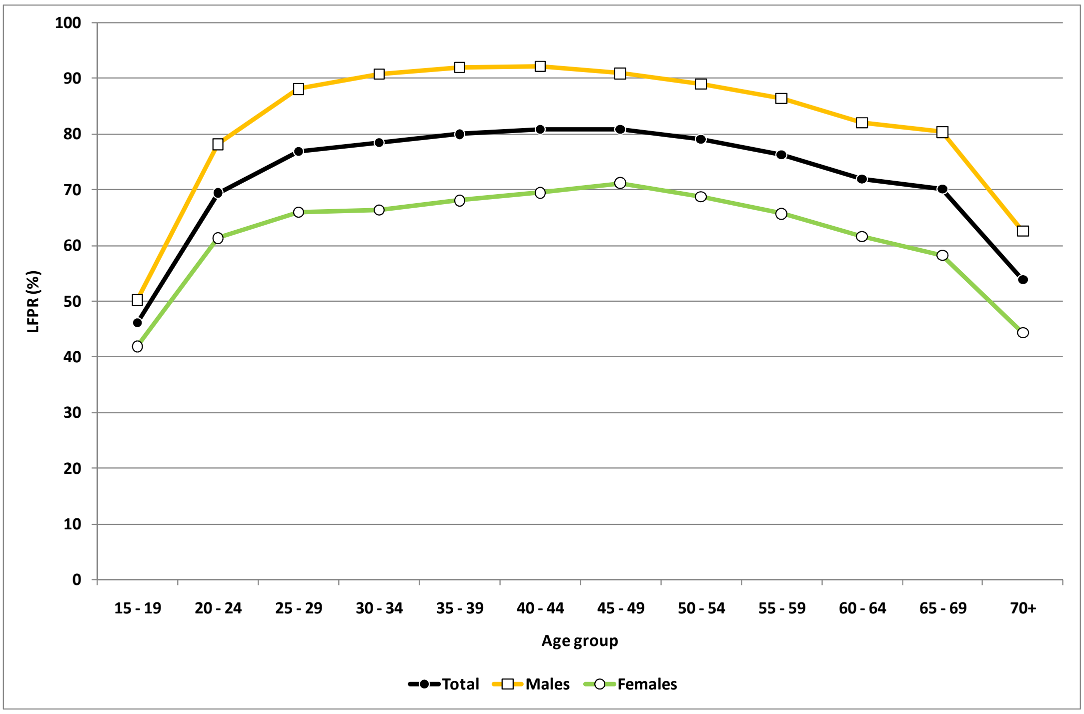


Figure 109: Population aged 15 and older by age, sex and labour force participation rate (LFPR), Urban areas: 2009

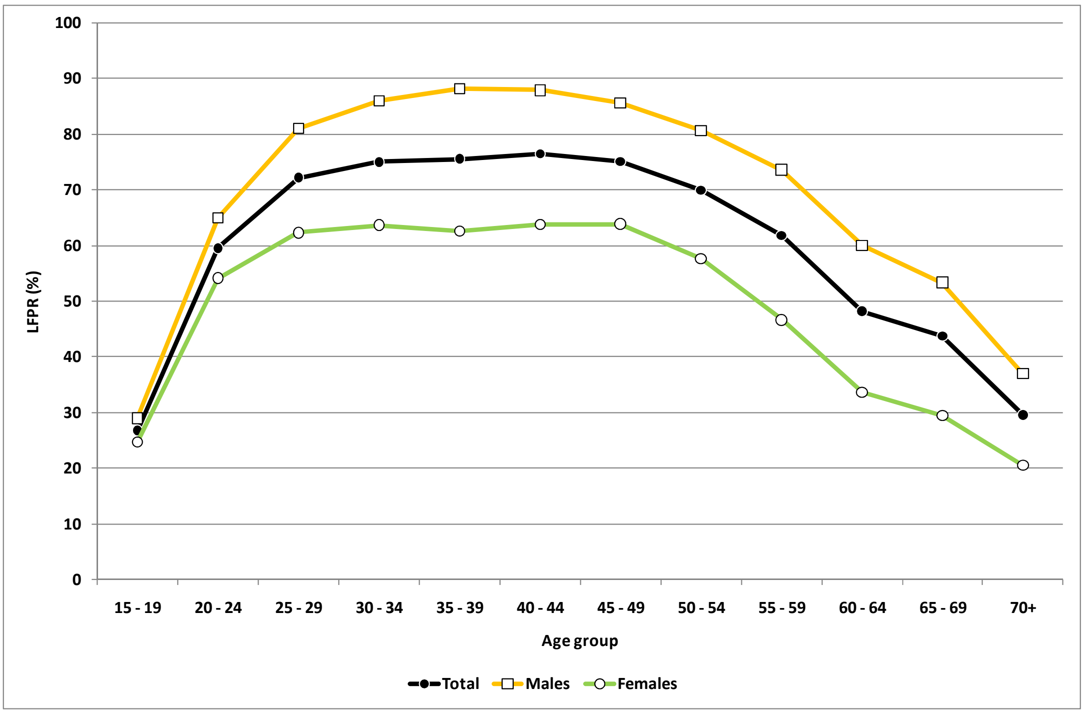


Figure 110: Population aged 15 and older by age, sex and labour force participation rate (LFPR), Rural areas: 2009

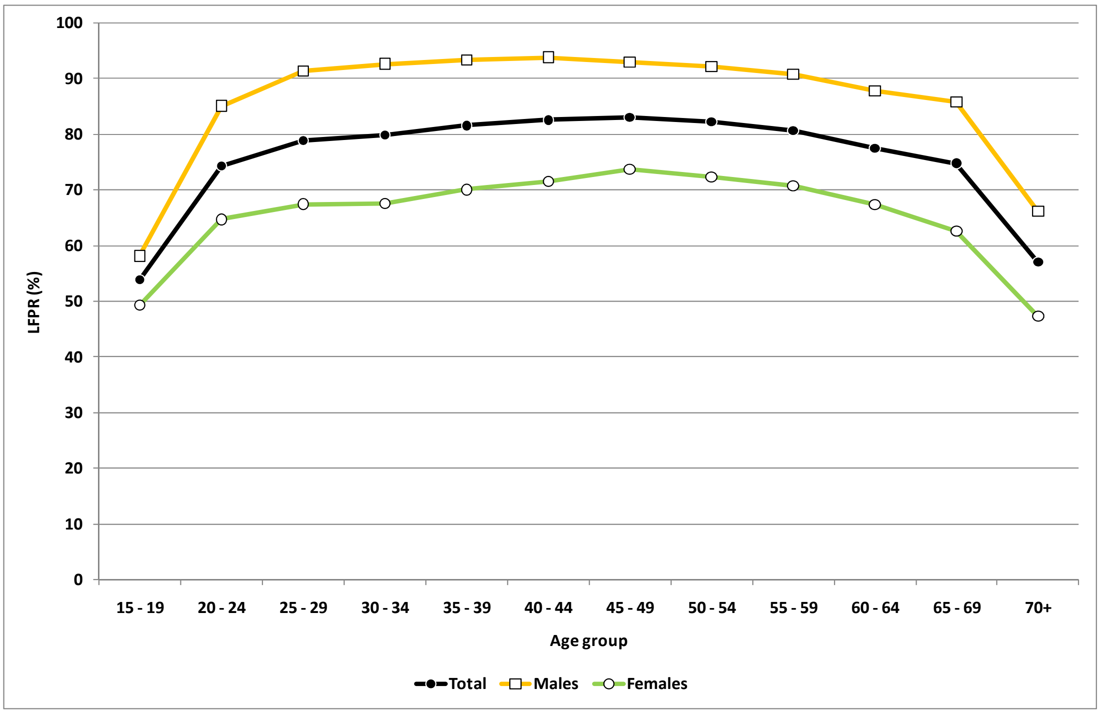


Figure 111: Population aged 15 and older by age, sex and employment–population ratio (EPR), Vanuatu: 2009

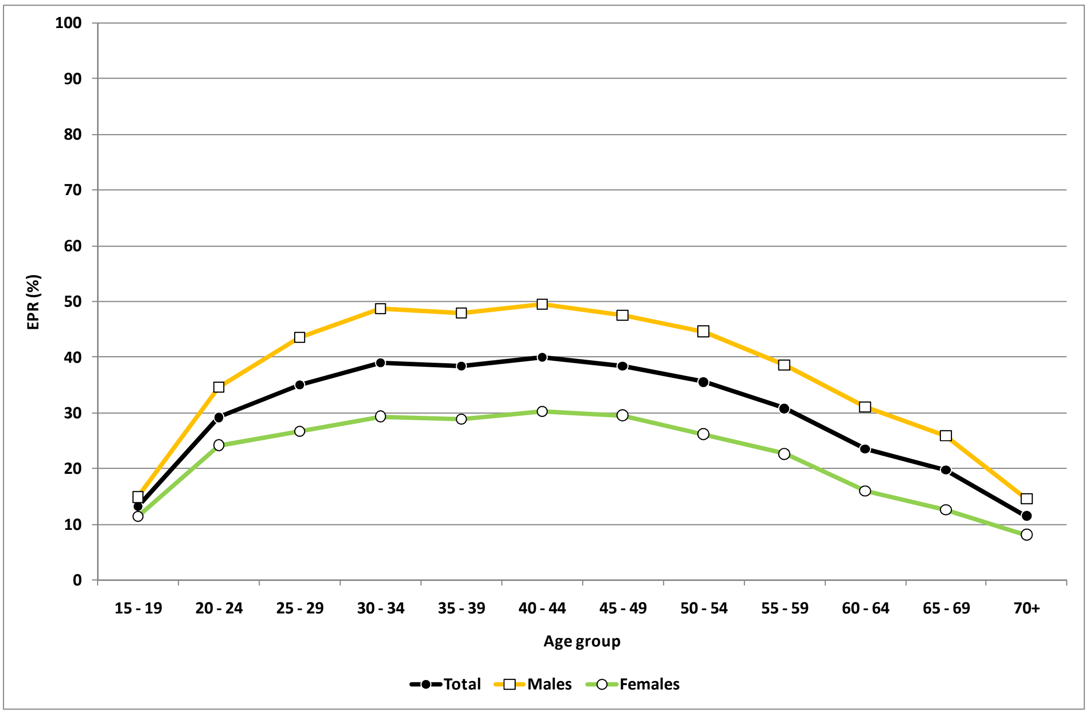


Figure 112: Population aged 15 and older by age, sex and employment–population ratio (EPR), Urban areas: 2009

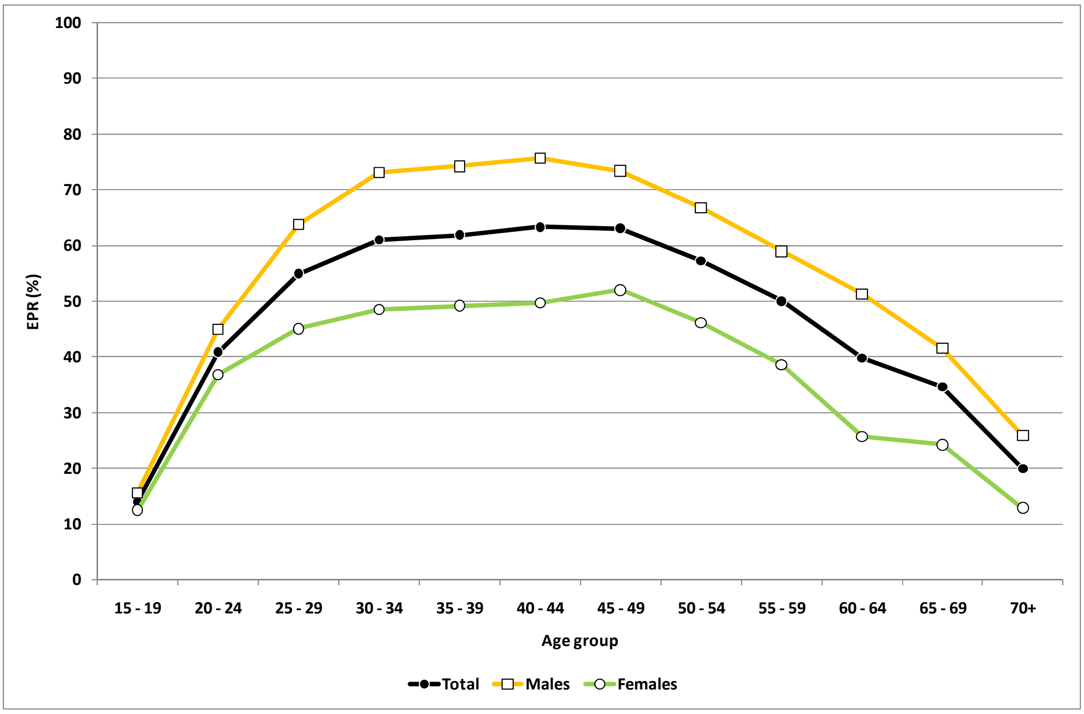


Figure 113: Population aged 15 and older by age, sex and employment–population ratio (EPR), Rural areas: 2009

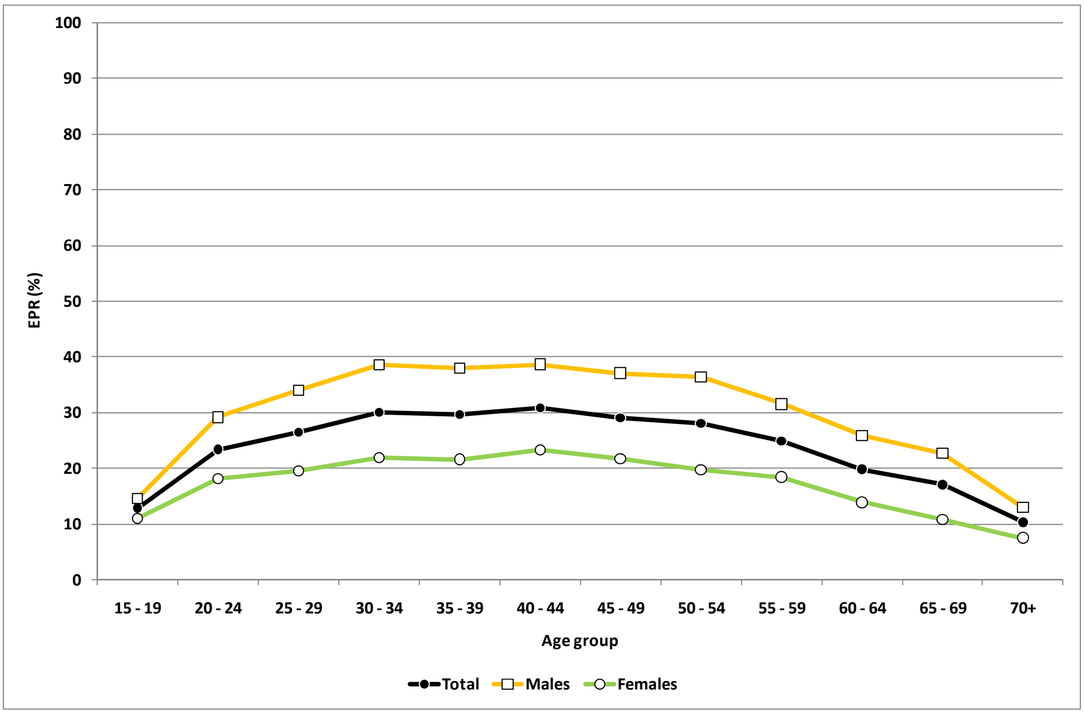


Figure 114: Population aged 15 and older by age, sex and unemployment rate (%), Vanuatu: 2009

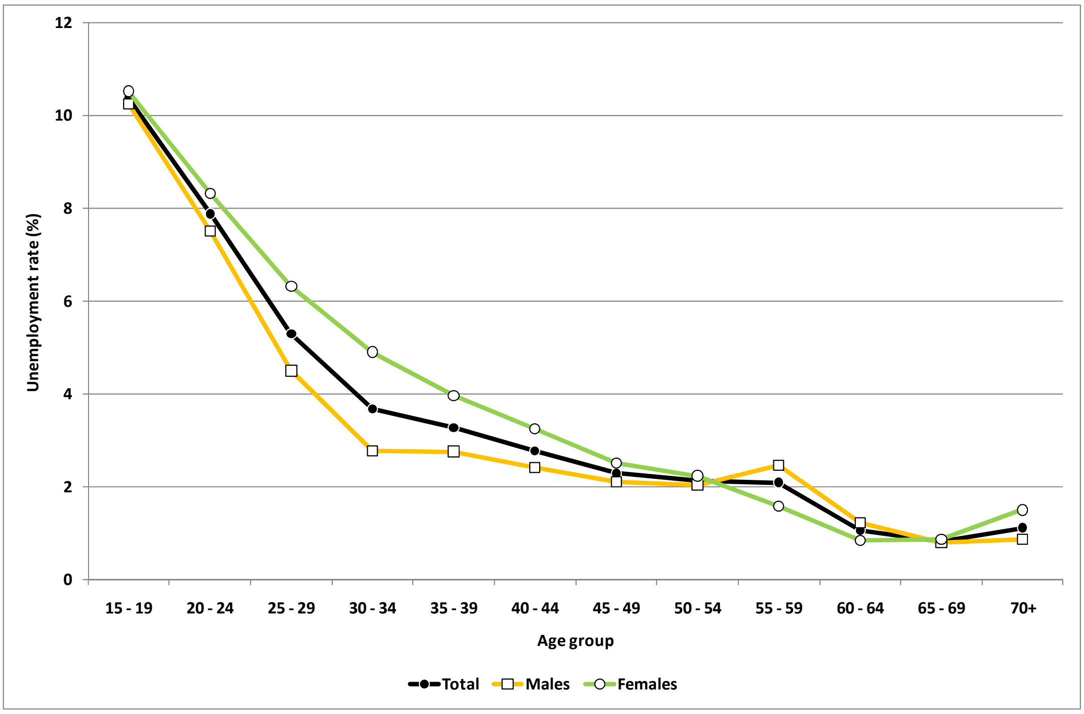


Figure 115: Population aged 15 and older by age, sex and unemployment rate (%), Urban areas: 2009

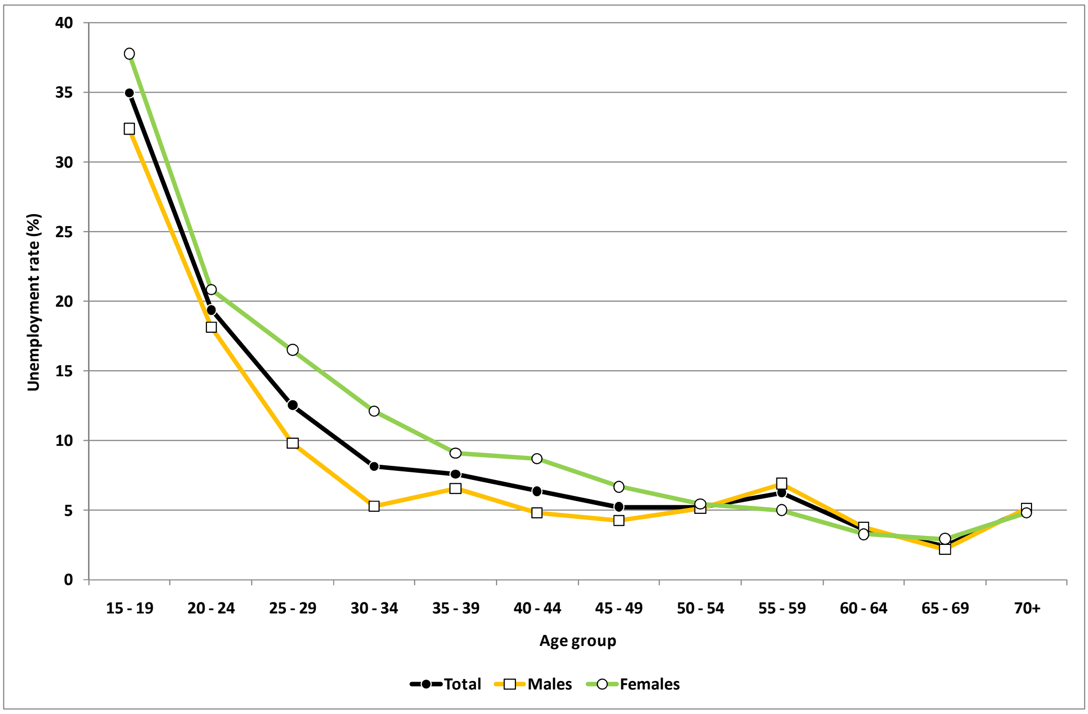
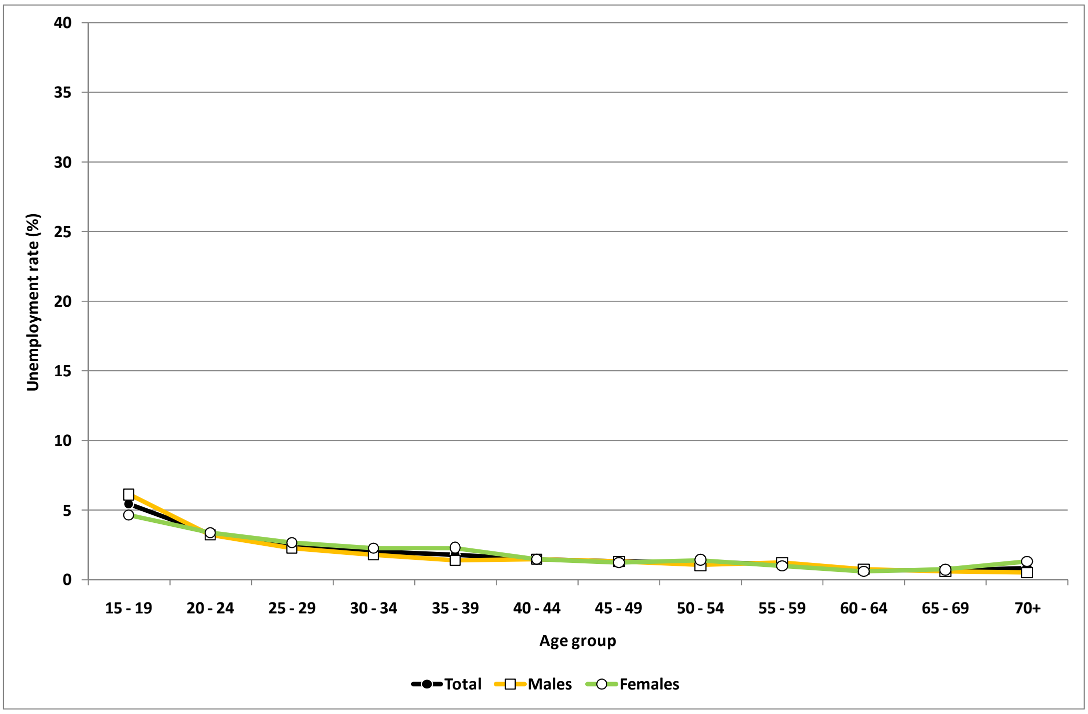


Figure 116: Population aged 15 and older by age, sex and unemployment rate (%), Rural areas: 2009



4.7.4 Employment status

About 47% of all people in paid employment were working for a private enterprise (19,886) which is comprised of 18,517 private employees and 1,369 employers. Another 24% produced goods for sale (10,046), 15% were working in the public service (6,489), and 14% were self employed (5,874) (Fig.55).

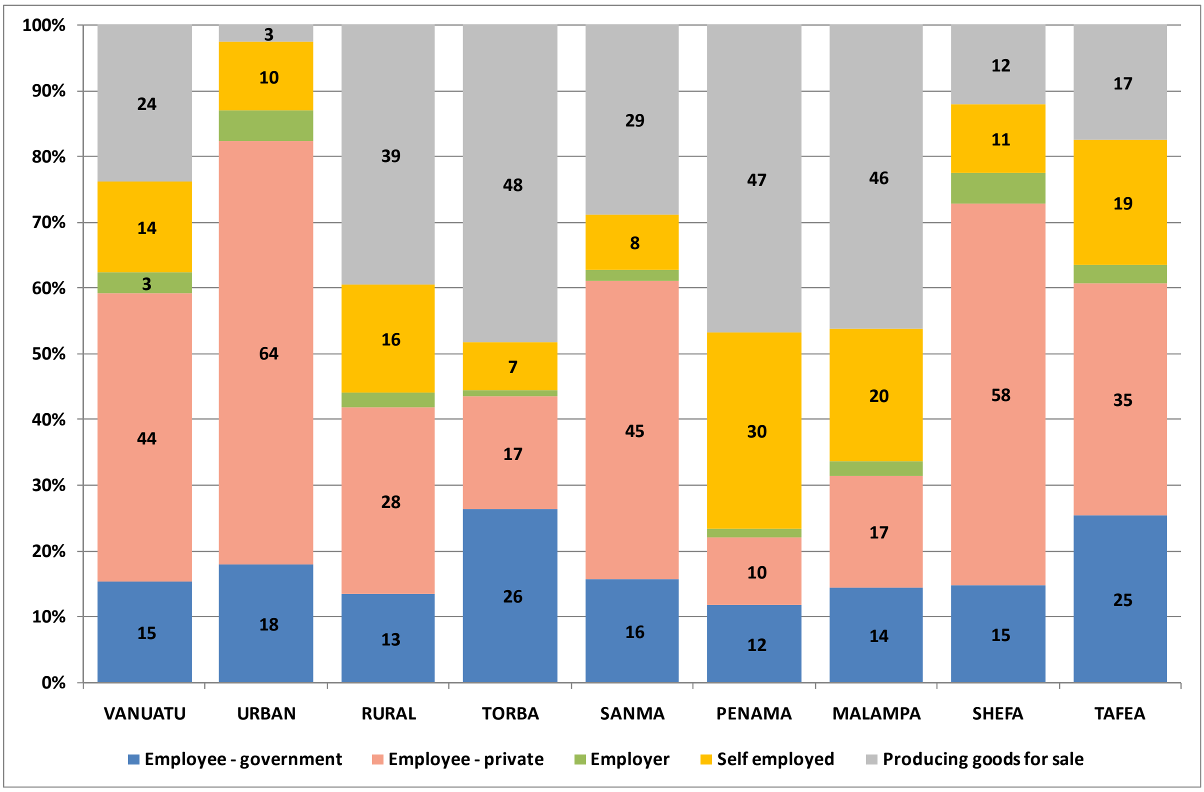
However, this pattern is very different for the urban and rural areas, and per province. While only 3% of all people in paid employment in the urban areas produced goods for sale, it was 39% in the rural areas. On the other hand, 64% of urban paid workers worked as private employees, it was only 28% in the rural areas.

Almost half of all paid workers in the provinces of Torba, Penama, and Malampa produced goods for sale.

The highest proportion of government employees were found in Torba (26%), and the lowest proportion in Penama with only 12% of all people in paid employment.

The highest proportions of employees in the private sector were found in Shefa (58%) and the lowest proportion with only 10% in Penama. However, 30% of all paid workers there were self employed.

Figure 117: Population in paid employment by employment status and place of residence, Vanuatu: 2009



4.7.5 Employed population by industry group

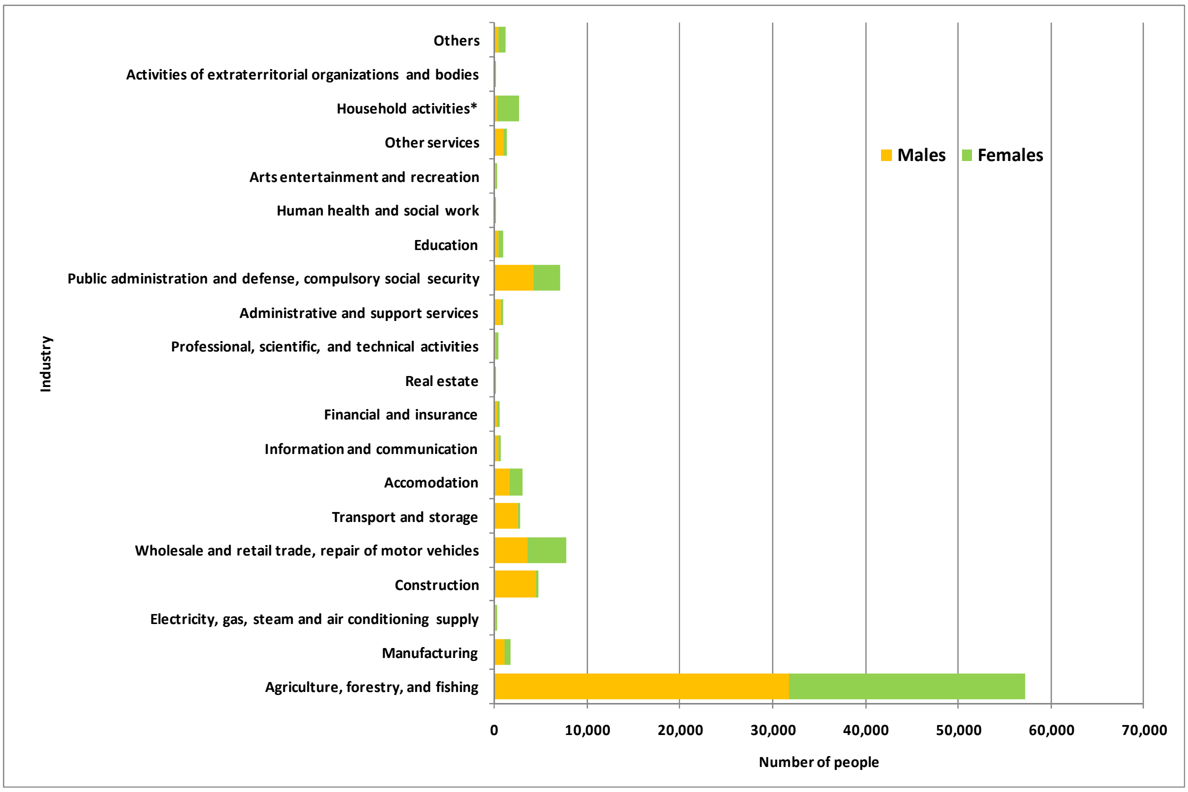
The vast majority of employed people in Vanuatu were employed in the *agriculture, forestry, and fishing sector* with 57,191 people and 61% of all employed people. The second and third largest groups were those in *wholesale and retail trade, repair of motor vehicles* with 7,746 employees, and *public administration and defense, compulsory social security* with 7,075 workers (Fig.118).

While *household activities* were dominated by females, most of all other industry groups employed more males than females.

Comparing the urban-rural areas, the employment situation is completely different; while three-quarter of all employed people in the rural areas were in the *agriculture, forestry, and fishing sector* (55,816), this was only 7% of all employed people in the urban areas (1,375).

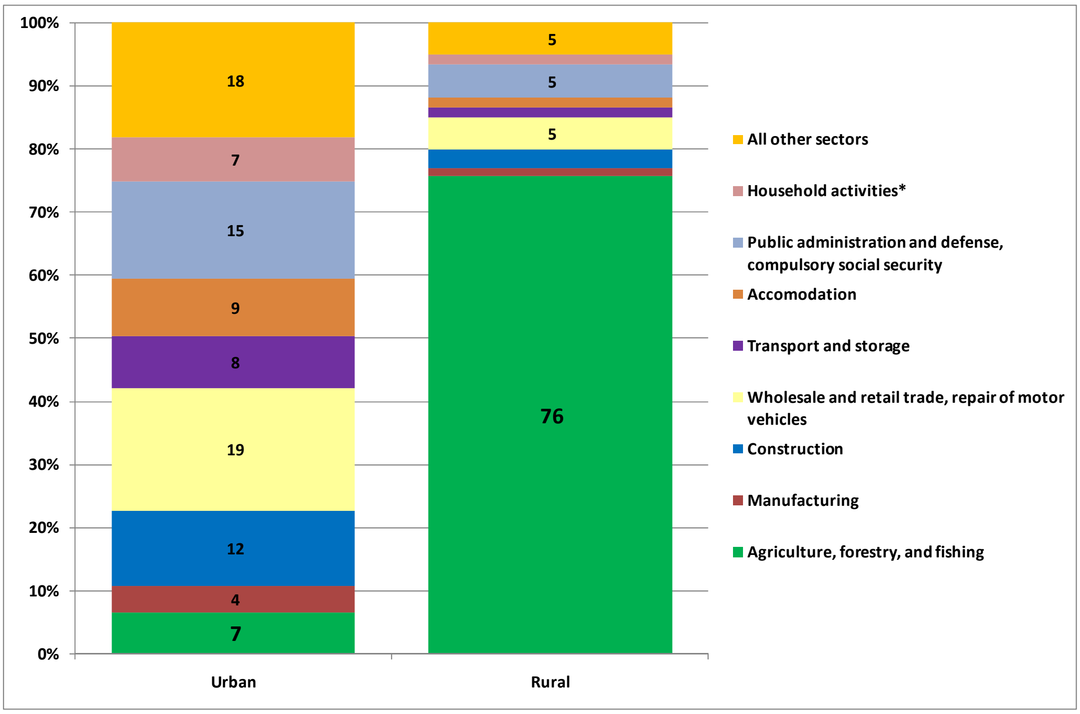
On the other hand, while 19% of employed persons in the urban areas were working in *wholesale and retail trade, repair of motor vehicles*, another 15% in *public administration and defense, compulsory social security*, and 12% in *Construction*, the proportions employed in these specific sectors in the rural areas were very small (Fig.119).

Figure 118: Employed population by sex and industry, Vanuatu: 2009



*Activities of households as employers, undifferentiated goods-and service-producing activities of household for own use

Figure 119: Employed population by urban-rural residence and industry, Vanuatu: 2009



4.7.6 Employed population by occupational group

The largest numbers of employed workers were in the category of *skilled agricultural forestry and fishery workers* with 49,769 people or 53% of all employed people (Figs.120-121). The second largest occupational group were with 13% the *elementary occupations* (12,314), followed with 9% by the *service and sales workers* (8,172), and with 8% of the *craft and related trades workers* (7,649).

While the *elementary occupations*, the *service and sales workers*, and *clerks, service workers* were dominated by females, all other categories were dominated by males. This was especially so for *plant and machine operators and assemblers*, as well as the *craft and related trades*.

As with industry, the difference between the urban and rural areas in terms of occupational groups is evident: while two-third of all occupations were s*killed agricultural forestry and fishery* workers in the rural areas (48,843), there were only 4% in the urban areas (926).

On the other hand, while 24% of all occupations in the urban areas were *service and sales workers*, and another 18% were *craft and related trades workers*, these categories were small percentage-wise in the rural areas.

It is worth noting that 16% of all occupations in the urban areas were *professionals* and *managers* compared to just 5% in the rural areas.

Figure 120: Employed population by sex and occupation, Vanuatu: 2009

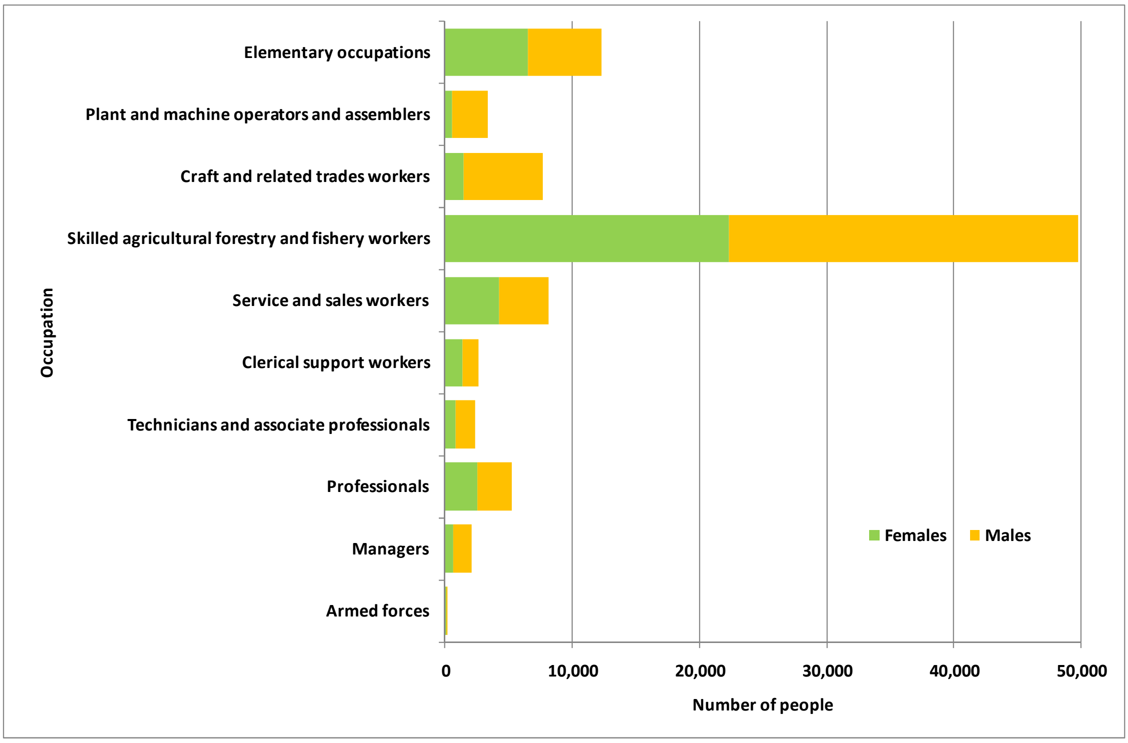
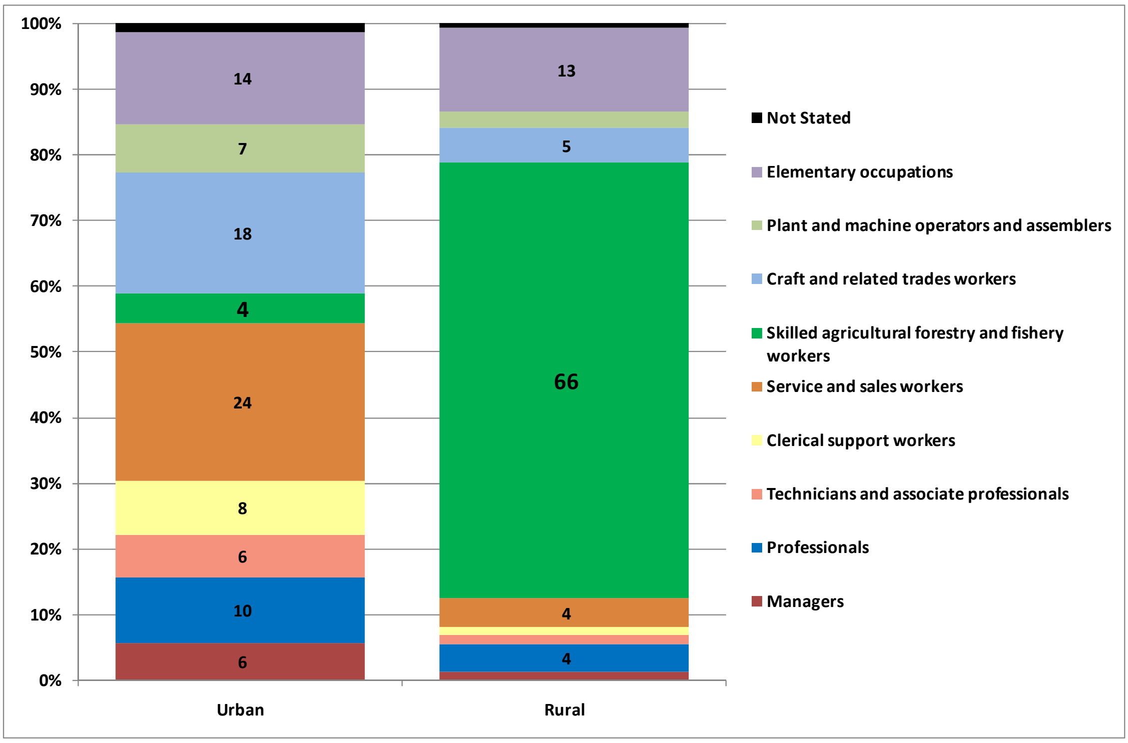


Figure 121: Employed population by place of residence and occupation, Vanuatu: 2009



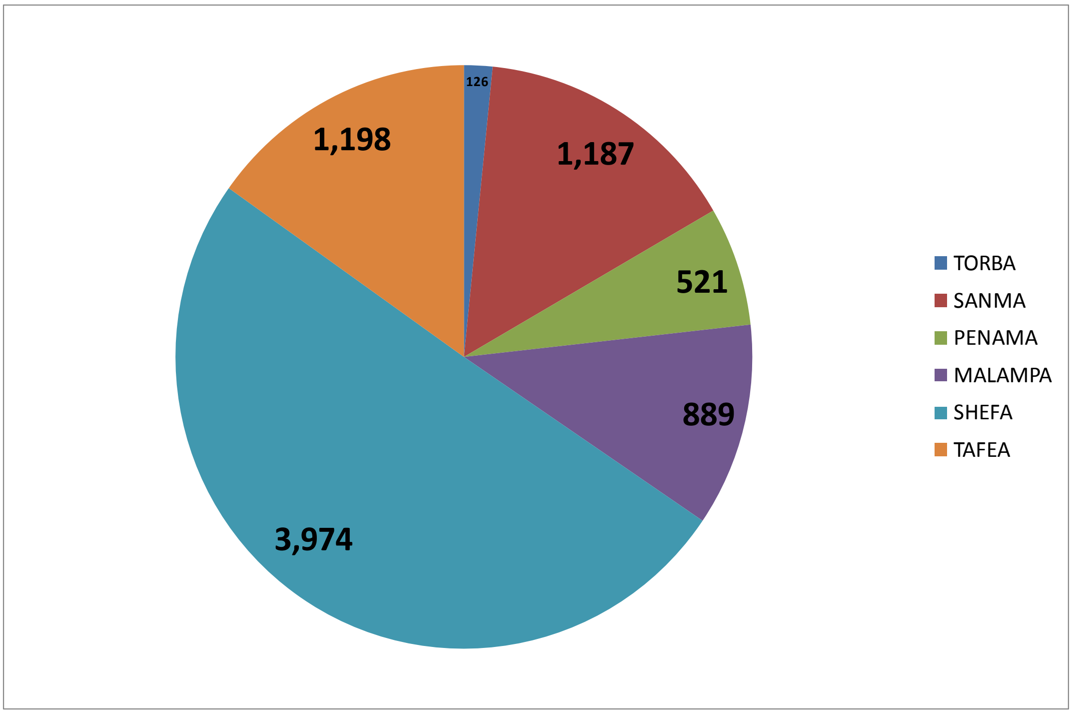
4.7.7 Population working overseas

The census included a question on whether a person worked for money overseas during the last 12 months before the census.

Almost 6% (7,895) of the population 15 years and older answered yes, 4,430 males and 3,465 females.

The numbers of overseas workers were unevenly divided among the different provinces, since about half of all workers were from Shefa province alone. Equal numbers were from Tafea and Sanma (Fig.122).

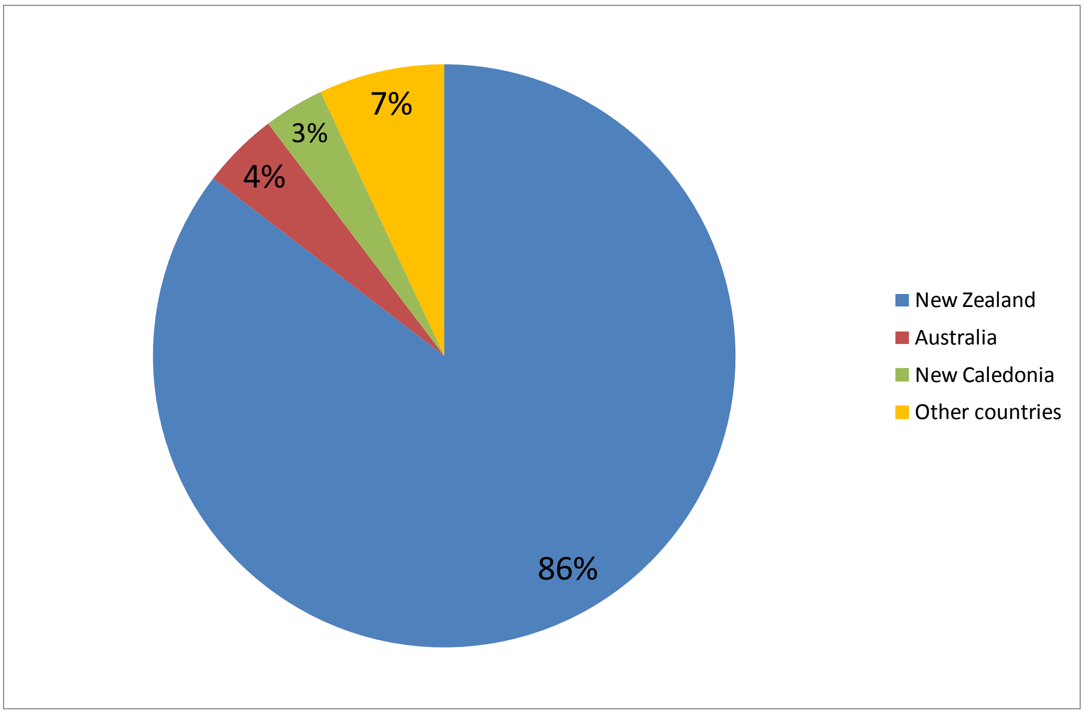
Figure 122: Population 15 years and older who worked overseas during the last 12 months before the census by place of residence, Vanuatu: 2009



Vanuatu enjoys the benefits of migrant labour with Government agreements with New Zealand and Australia.

The most popular country was New Zealand where 86% of all people worked. The New Zealand Recognized Seasonal Employer (RSE) programme began in 2007 with a pilot and larger numbers followed thereafter. The Australian pilot was in 2009. The workers are mostly unskilled and are mainly involved in agricultural work (Fig.123).

Figure 123: Destination countries of overseas workers (%), Vanuatu: 2009



5. HOUSEHOLD CHARACTERISTICS

5.1 Household size

The number of (private) households increased from 27 thousand in 1989 to 47 thousand in 2009, an overall increase of more than 20 thousand households (Table 39).

In addition, there were 209 non-private dwellings (institutions) in 2009, including accommodations such as hotels and hostels for short-term visitors, as well as hospitals and a prison.

The overall average household size decreased from 5.2 to 4.8 people per household between 1989 and 2009.

Household growth rates also decreased, from 2.8% to 2.6% between 1989-99 and 1999-2009 (Table 40).

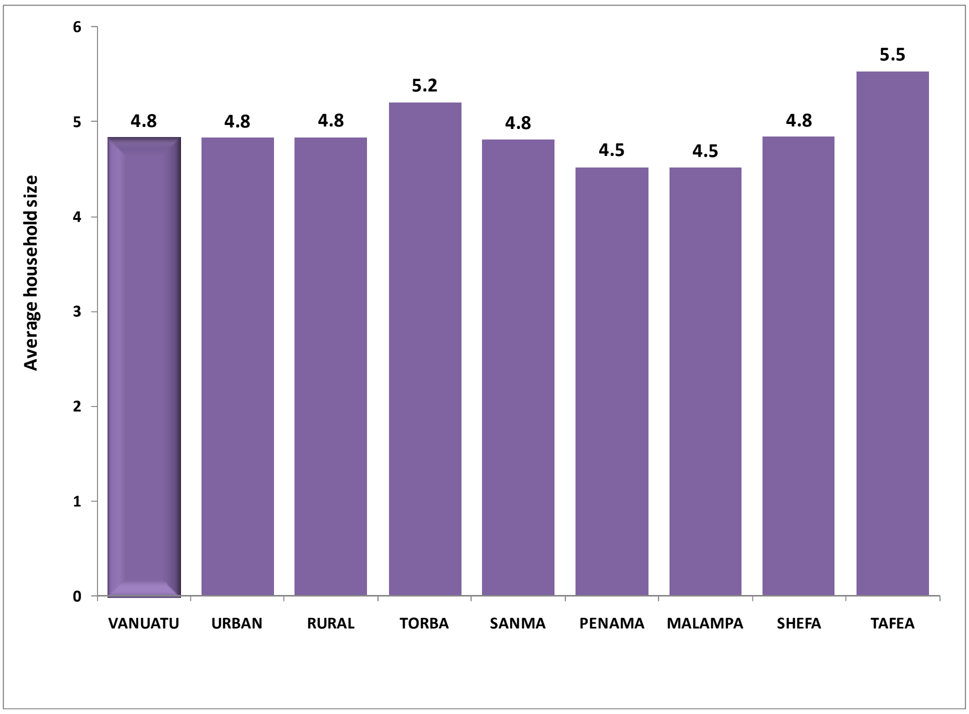
Table 39: Population in private households, number of private households and average household size, by place of residence, Vanuatu: 1989, 1999 and 2009

Place of residence	Number of people in private households			Number of private household			Average Household size		
	1989	1999	2009	1989	1999	2009	1989	1999	2009
VANUATU	**142,419**	**186,678**	**228,883**	**27,167**	**36,415**	**47,373**	**5.2**	**5.1**	**4.8**
URBAN	25,870	40,094	56,016	4,576	8,258	*11,606*	5.7	4.9	4.8
RURAL	116,549	146,584	172,867	22,591	28,157	*35,767*	5.2	5.2	4.8
TORBA	5,985	7,757	9,189	1,074	1,339	1,766	5.6	5.8	5.2
SANMA	25,542	36,084	44,287	4,771	6,970	9,213	5.4	5.2	4.8
PENAMA	22,281	26,646	29,926	4,488	5,371	6,620	5.0	5.0	4.5
MALAMPA	28,174	32,705	36,060	5,721	6,483	7,991	4.9	5.0	4.5
SHEFA	38,023	54,439	77,047	6,713	10,888	15,930	5.7	5.0	4.8
TAFEA	22,414	29,047	32,374	4,400	5,364	5,853	5.1	5.4	5.5

Table 40: Number of private households and household change, Vanuatu: 1989, 1999 and 2009

Place of residence	Number of private household			Household Change						Doubling Time	
				in numbers		in (%)		Annual Growth Rate			
	1989	1999	2009	1989-1999	1999-2009	1989-1999	1999-2009	1989-1999	1999-2009	1999	2009
VANUATU	**27,167**	**36,415**	**47,373**	**9,248**	**10,958**	**6.5**	**5.9**	**2.8**	**2.6**	**25.1**	**26.6**
URBAN	4,576	8,258	*11,606*	3,682	3,348	14.2	8.4	5.6	3.4	12.5	20.6
RURAL	22,591	28,157	*35,767*	5,566	7,610	4.8	5.2	2.1	2.4	33.4	29.3
TORBA	1,074	1,339	1,766	265	427	4.4	5.5	2.1	2.8	33.4	25.3
SANMA	4,771	6,970	9,213	2,199	2,243	8.6	6.2	3.6	2.8	19.4	25.1
PENAMA	4,488	5,371	6,620	883	1,249	4.0	4.7	1.7	2.1	41.0	33.5
MALAMPA	5,721	6,483	7,991	762	1,508	2.7	4.6	1.2	2.1	58.8	33.5
SHEFA	6,713	10,888	15,930	4,175	5,042	11.0	9.3	4.6	3.8	15.2	18.4
TAFEA	4,400	5,364	5,853	964	489	4.3	1.7	1.9	0.9	37.1	80.3

Figure 124: Average household size (number of people per household) by place of residence, Vanuatu: 2009



Torba and Tafea province had the highest average household size with 5.2 and 5.5 persons per household respectively. Average household size for Penama and Malampa were the lowest with 4.5 people per household (Fig.124).

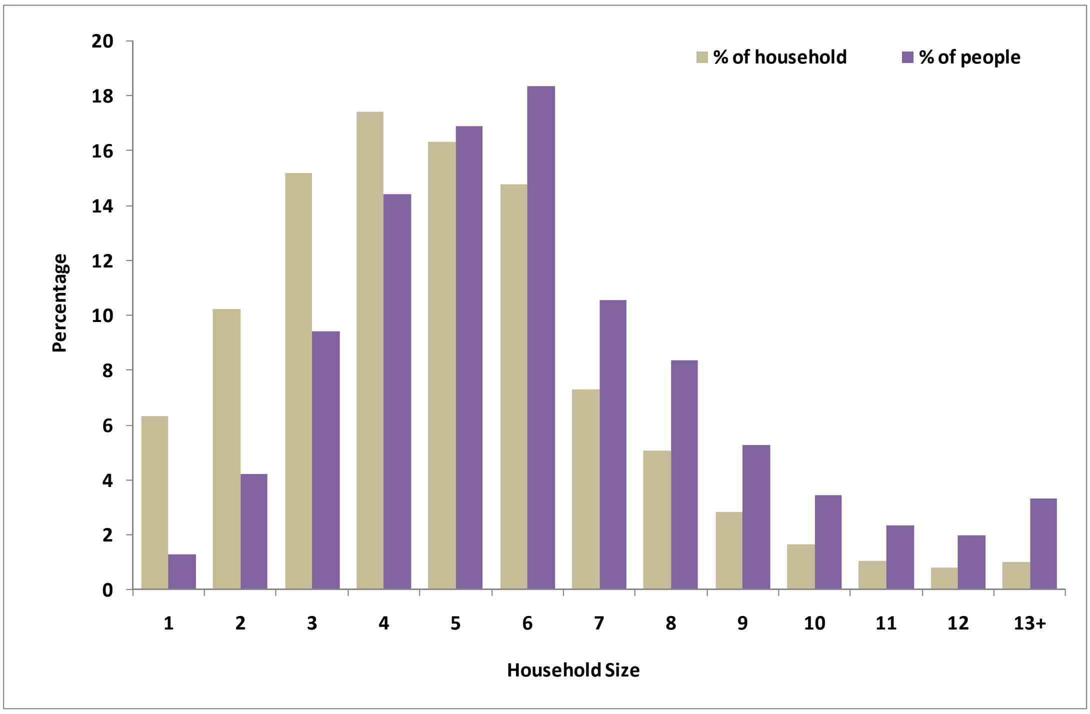
In 2009, the most common household size was 4, accounting for 17 % of all private households (Table 41 and Fig.125). The highest proportion of people, however, lived in households with 6 people, which accounted for 18 % of all people.

Five percent of the population lived in households with 12 or more people, while 1 % of the population lived in single-person households, which accounted for 6% of all households.

Table 41: Number of private households by household size and people per household (%), Vanuatu: 2009

Household size	Private Households		People per household size	
	Number	%	Number	%
1	2,997	6.3	2,997	1.3
2	4,851	10.2	9,702	4.2
3	7,199	15.2	21,597	9.4
4	8,253	17.4	33,012	14.4
5	7,735	16.3	38,675	16.9
6	6,994	14.8	41,964	18.3
7	3,454	7.3	24,178	10.6
8	2,398	5.1	19,184	8.4
9	1,347	2.8	12,123	5.3
10	789	1.7	7,890	3.4
11	491	1.0	5,401	2.4
12	377	0.8	4,524	2.0
13+	488	1.0	7,636	3.3
Total	**47,373**	**100.0**	**228,883**	**100.0**

Figure 125: Distribution of households and people living in private households by household size (%), Vanuatu: 2009



5.2 Household composition

Data on household composition were established by identifying a head of household who served as a reference person to whom all other people in the household, in terms of family membership, are related (Table 42).

Approximately 4 out of 5 heads of household (79%) in Vanuatu were men (37,442) with one-in-five (9,931) of households headed by women.

Sons and daughters made up the most household members with 44%. Spouses of head of households comprised of 15% of the total household members.

Eight per cent of all household members were other relatives or not related to the head of household.

Interestingly there were only 2,427 male spouses recorded in the census, while there were 9,931 female heads of households. Apparently a woman is in most cases only the head of household if she has no spouse, or if he is not present (overseas).

Table 42: Population by household composition (relationship to head of household), Vanuatu: 2009

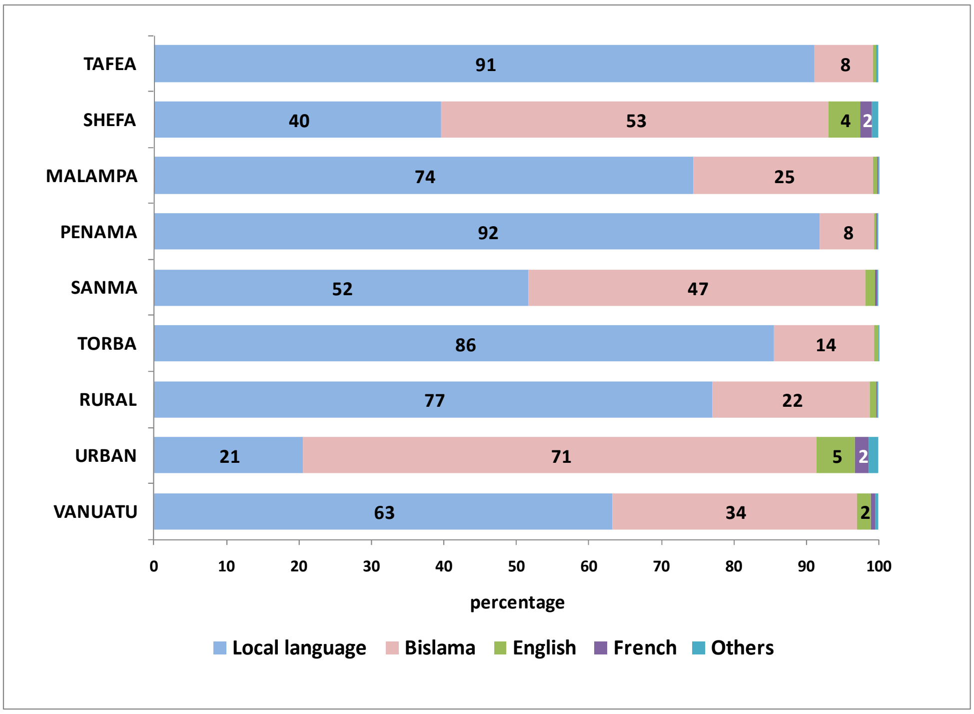
Relationship	in numbers			in percentage		
	Total	Male	Female	Total	Male	Female
Head of household	47,373	37,442	9,931	21	32	9
Spouse of head	35,127	2,427	32,700	15	2	29
Son/Daughter	99,710	52,531	47,179	44	45	42
Adopted son/daughter	1,967	995	972	1	1	1
Son in law/daughter in law	2,261	750	1,511	1	1	1
Grandchild	14,261	7,683	6,578	6	7	6
Parent/Parents in law of head	3,396	1,075	2,321	1	1	2
Brother/Sister (including in laws)	6,048	3,371	2,677	3	3	2
Other relatives	17,731	9,393	8,338	8	8	7
Not related/friend	1,009	615	394	0	1	0
Total	228,883	116,282	112,601	100	100	100

5.3 Household language

Sixty-three per cent of all households in Vanuatu spoke local languages and 34% used Bislama as the main spoken language in their households. Only 2% used English and 1% used French as the main spoken languages in their households. (Fig.126)

Bislama was more dominant in the urban areas while local languages were more commonly spoken in the rural areas.

Figure 126: Proportion of private households by main language spoken, by place of residence (%), Vanuatu: 2009



5.4 Household income

In 2009, 46% of the main source of household income, in Vanuatu, was from the sale of fish or crops or handicrafts. Another 34% of the main household income was from wages or salary, 7% of the household income was from own business activities and 5% household income from other sources. Six percent of all households in Vanuatu do not have any income.

When comparing the urban and rural areas for income distribution it is clearly shown in Figure 127 that 81% of all urban households stated that their main source of income was wages or salary and only 18% of all rural household who stated these main sources of income. In contrast, 60% of all rural households stated that their main source of income is from the sale of fish/crops/handicrafts which compares to 3% of urban households.

When comparing the household income distribution by province it is evident that the sales of fish/crop/handicraft and wages or salaries were significant contributors in terms of household income (Fig. 128).

Figure 127: Proportion of private households by main source of household income and urban and rural residence (%), Vanuatu: 2009

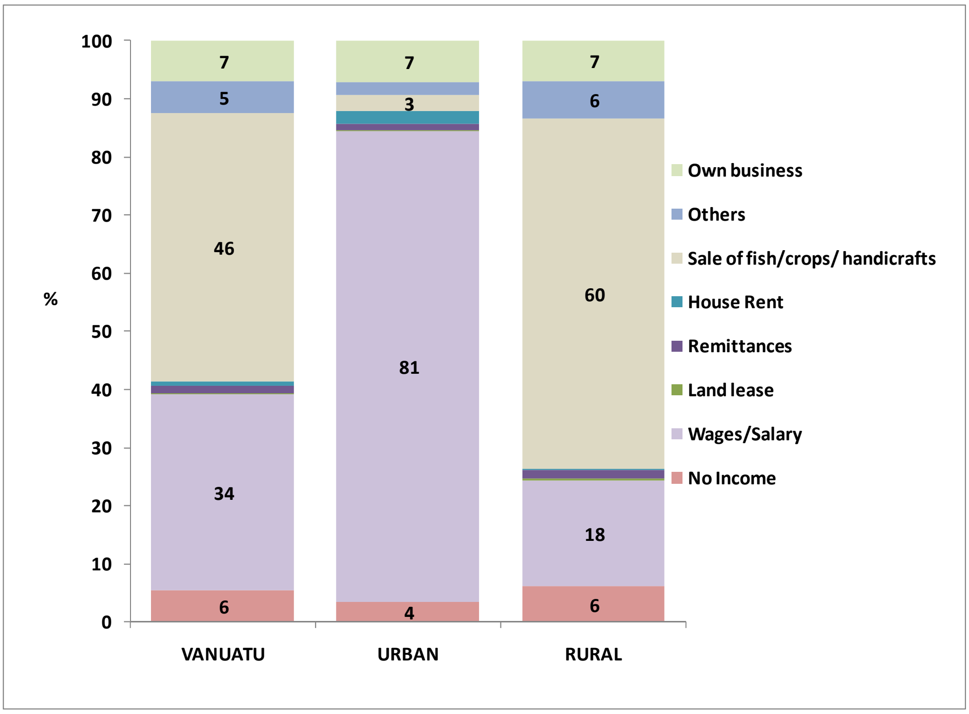
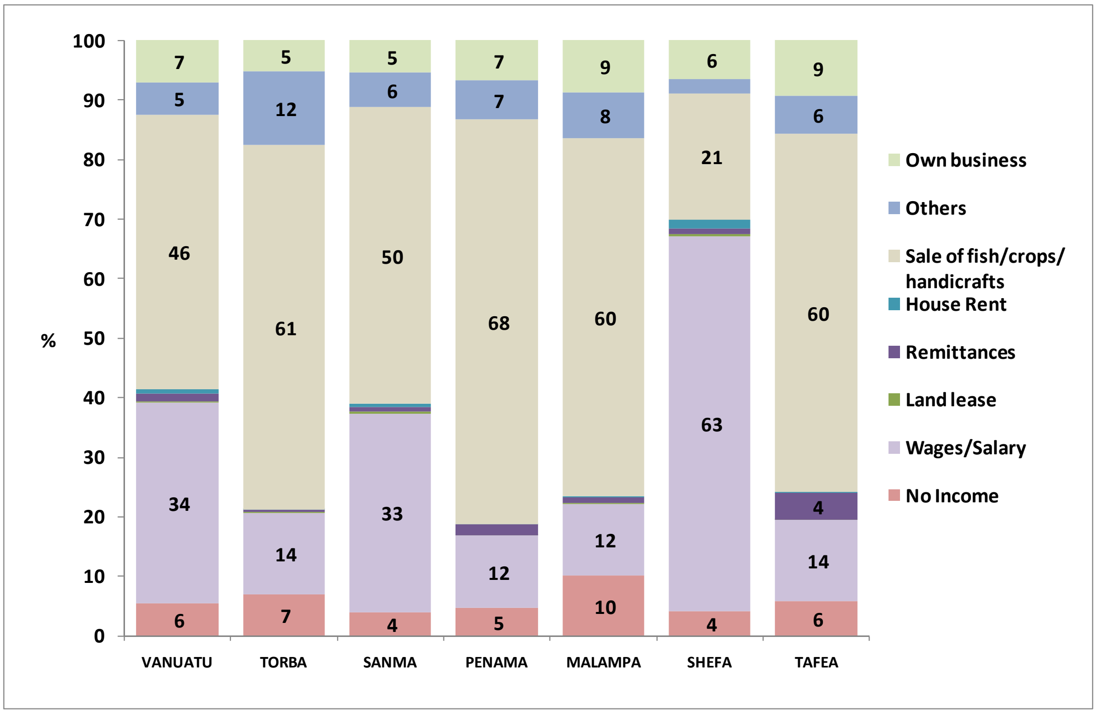


Figure 128: Proportion of private households by main source of household income and by province (%), Vanuatu: 2009



5.5 Amenities and capital goods

Please note that the following data for this section are presented as percentages of all private households by place of residence.

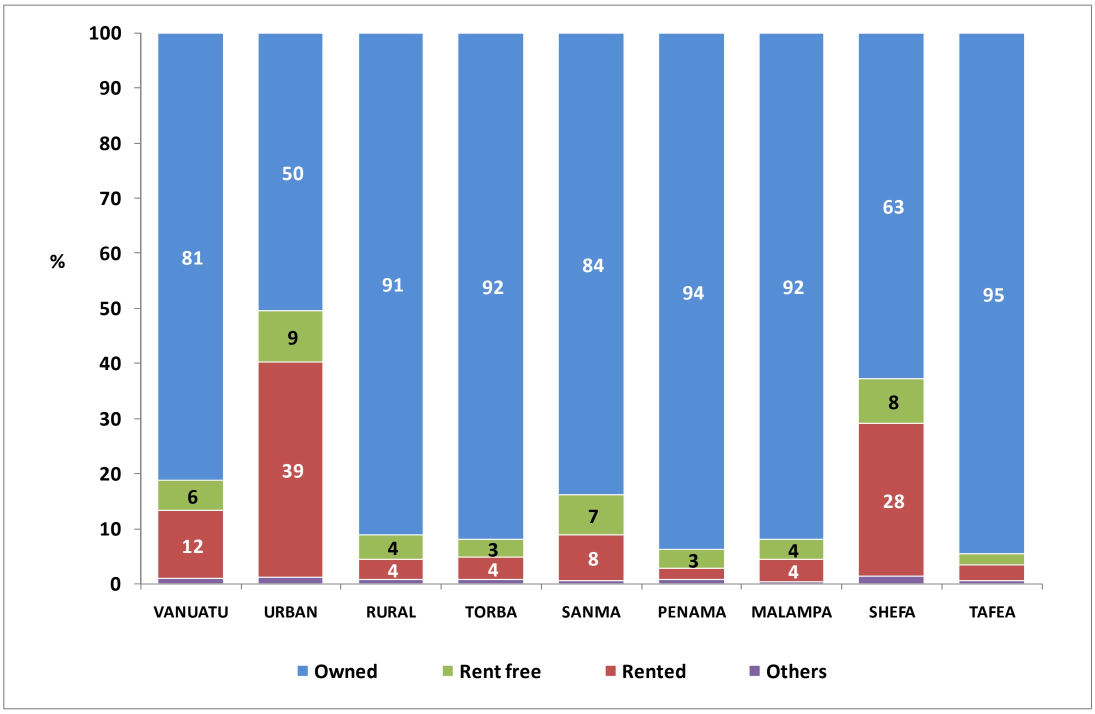
5.5.1 Private households by housing and land tenure

The majority of households in Vanuatu (81%) owned their dwelling outright (Fig.129), 12% rented their dwelling and 6 % stayed in rent free dwelling.

The proportion of households renting was highest in the urban areas with 39%.

Shefa province had the highest proportion of people renting (28%) compared to the other provinces.

Figure 129: Proportion of private households by place of residence and housing tenure (%), Vanuatu: 2009



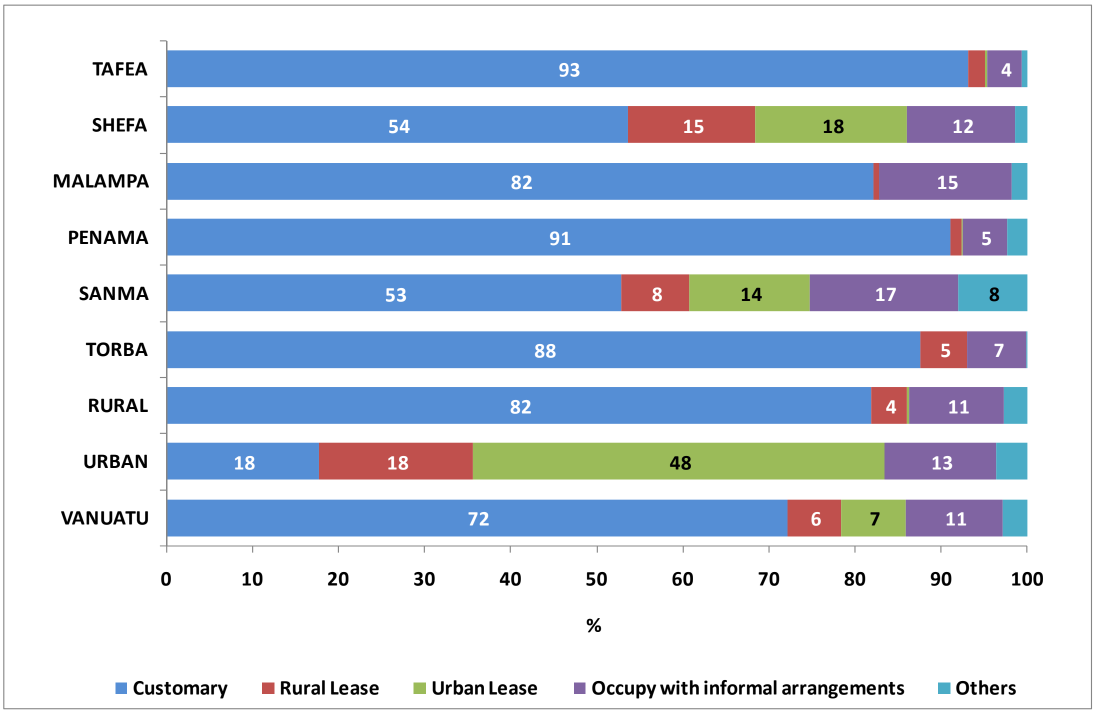
The majority of households in Vanuatu (72%) resided on customary land (Fig.130), 11% lived on occupied land with no informal arrangement and 7% and 6% lived on urban and rural land leases.

Forty eight percent of households in the urban areas had urban leases, 18% rural leases, another 18% customary leases and 13% occupied land with informal arrangement.

Rural areas had 82% of households living on customary land, 11% occupying land with an informal arrangement and 4% living with rural lease.

Shefa and Sanma have similar patterns of land tenure distribution because urban areas are part of these two provinces.

130: Proportion of private households by place of residence and land tenure (%), Vanuatu: 2009

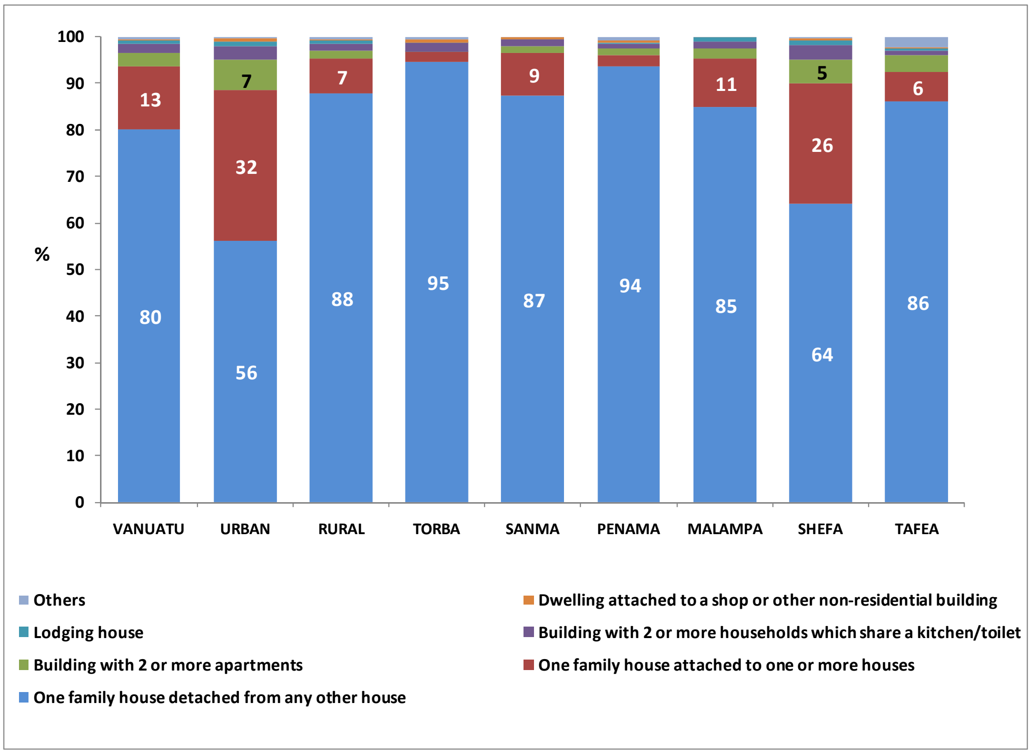


5.5.2 Private households by living quarters

The majority, 80% of Vanuatu households had living quarters of one family house detached from any other house, 13% of households were one family house attached to one or more houses and 3% of households were living in buildings with 2 or more apartments (Fig.131).

Living quarters of one family house attached to one or more houses was much higher in the urban areas (32%) than in the rural areas (7%). Also it was much higher in Shefa province compared to the other provinces.

Fig 131: Proportion of private households by place of residence and living quarters (%), Vanuatu: 2009

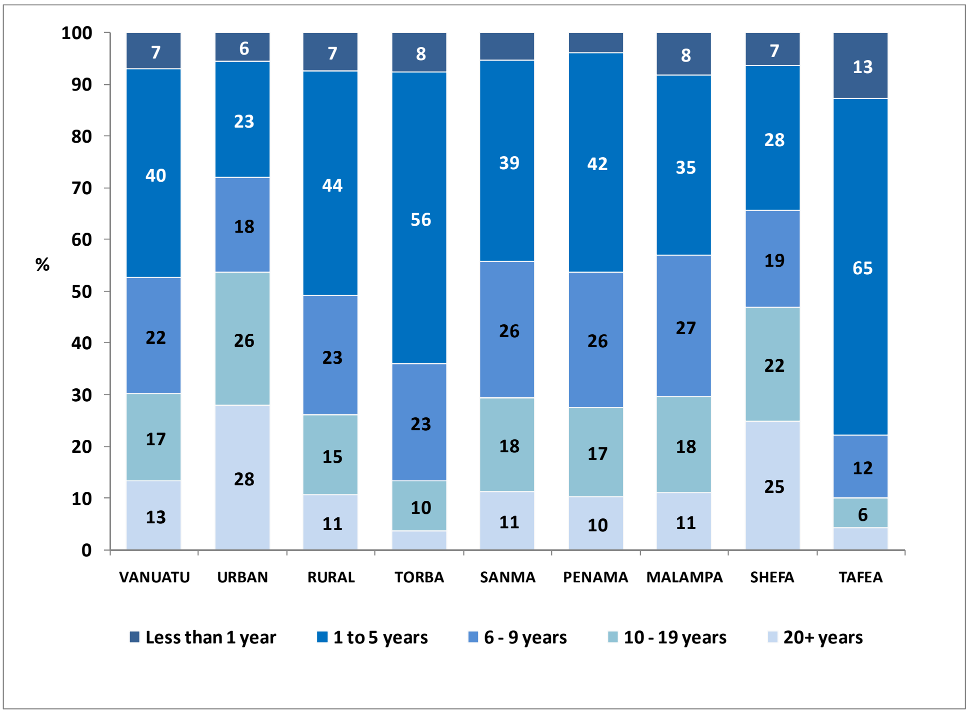


5.5.3 Private households by age of dwelling

The distribution of dwellings by age of dwelling is displayed in Figure 132. It shows that about 40% of all dwellings in Vanuatu were between 1 and 5 years old, 22% between 6 to 9 years, 17% between 10 to 19 years, 13% 20 years or older and 7% were recently built, and were less than 1 year old.

Most urban dwellings were 10 years and older while most dwellings in the rural areas were younger than 10 years.

Figure 132: Proportion of private households by place of residence and age of dwelling (%), Vanuatu: 2009



5.5.4 Private households by number of rooms

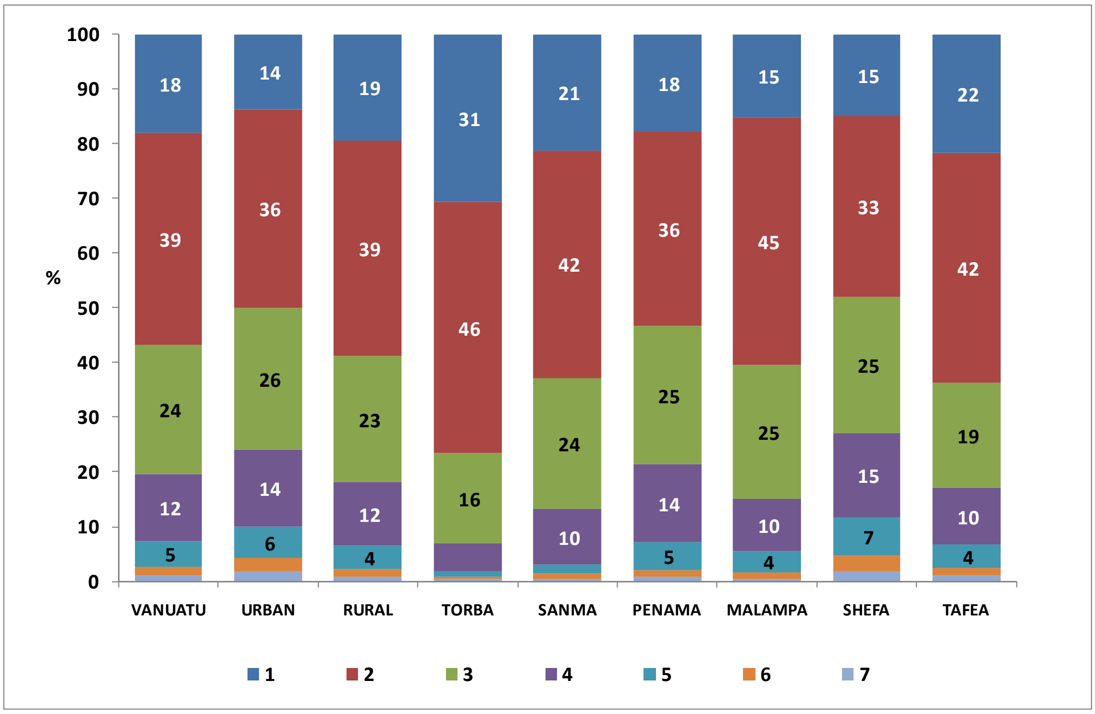
The distribution of dwellings by number of rooms is displayed in Figure 133. It shows that the majority (39%) of all dwellings in Vanuatu had 2 rooms, and another 24% had 3 rooms, 18% had 1 room and 12% had 4 rooms. The average number of rooms was about 2.6 rooms per dwelling (Table 43).

The average number of rooms was higher in urban than in rural areas, and higher in Shefa than the other provinces.

Table 43: Average number of rooms per dwelling by place of residence, Vanuatu: 2009

VANUATU	URBAN	RURAL	TORBA	SANMA	PENAMA	MALAMPA	SHEFA	TAFEA
2.6	2.8	2.5	2.0	2.3	2.6	2.5	2.8	2.4

Figure 133: Proportion of private households by place of residence and number of rooms (%), Vanuatu: 2009



5.5.5 Private households by construction material used for dwelling

Forty three percent of the material used for the walls of private dwellings was traditional materials, followed by concrete (25%), 19% were metal walls, wood or timber (10%) and makeshift or improvised materials are 3% (Fig.134). Concrete walls are more popular in urban areas compared to traditional materials in the rural areas.

Roofing metal accounted for 48% of the material used for roofs (Fig.135) and 45% traditional material roofing. Metal roofing was commonly used in urban areas compared to traditional material roofing in the rural areas.

Sixty percent of all dwellings in Vanuatu had concrete (cement) floors (Fig.136), which was the preferred material used for the floors in all province except in Torba and Tafea which had traditional materials as the preferred floor material.

Figure 134: Proportion of private households by place of residence and main type of material used for the walls of dwellings (%), Vanuatu: 2009

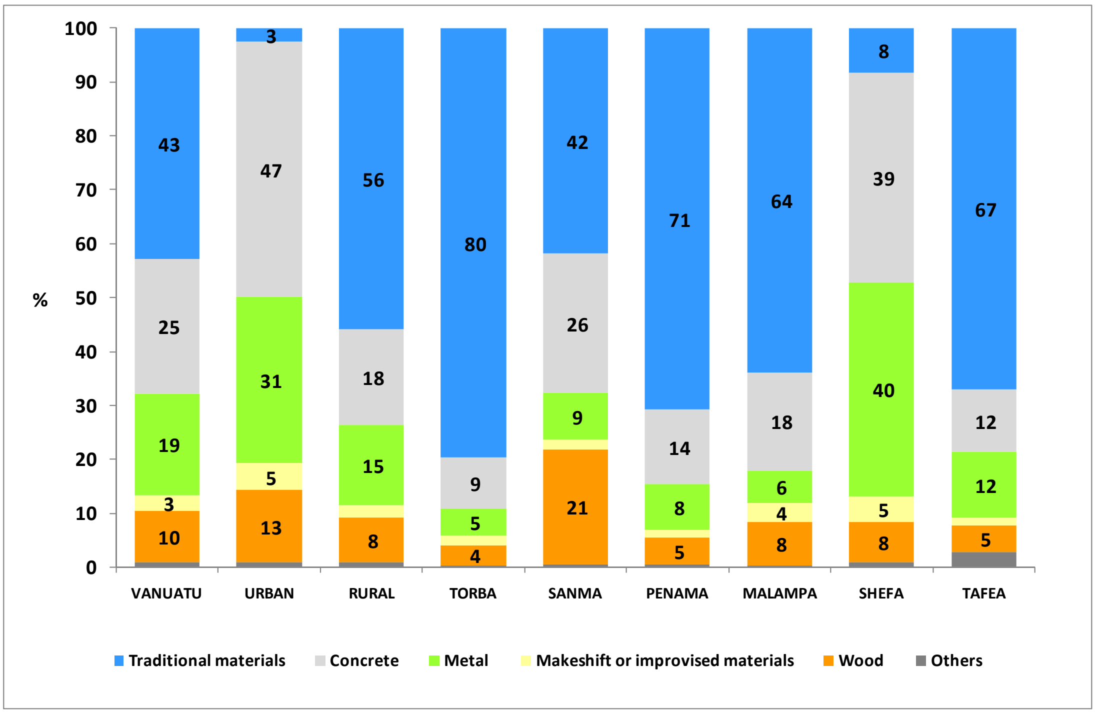


Figure 135: Proportion of private households by place of residence and main type of material used for the roofs of dwellings (%), Vanuatu: 2009

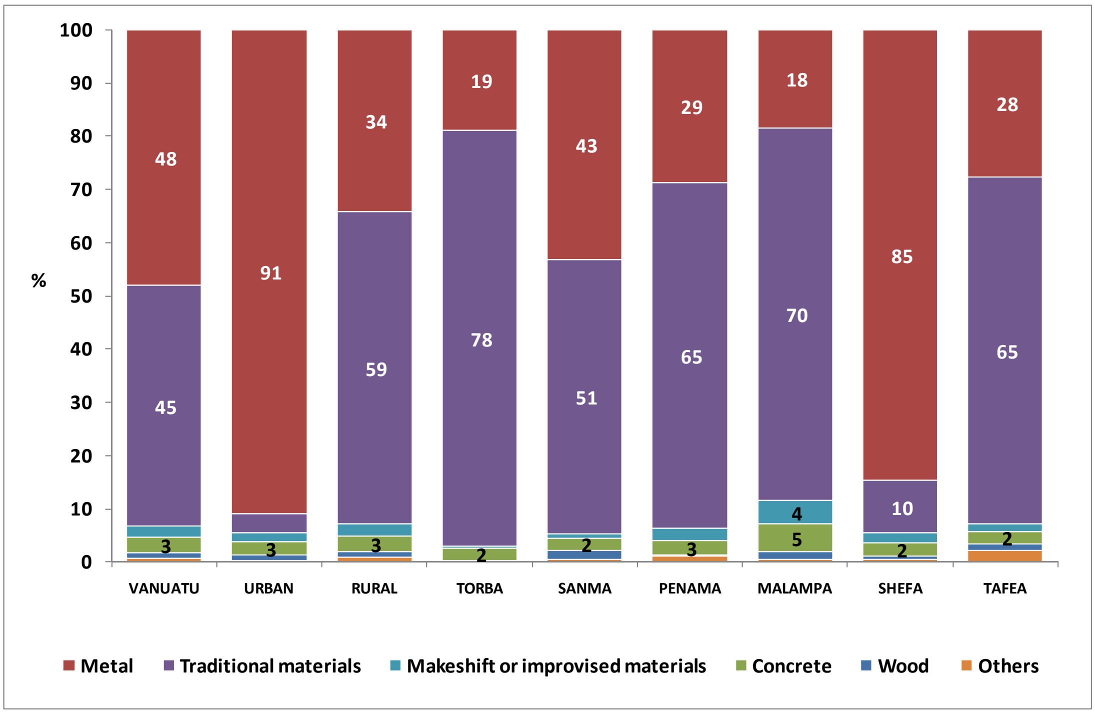
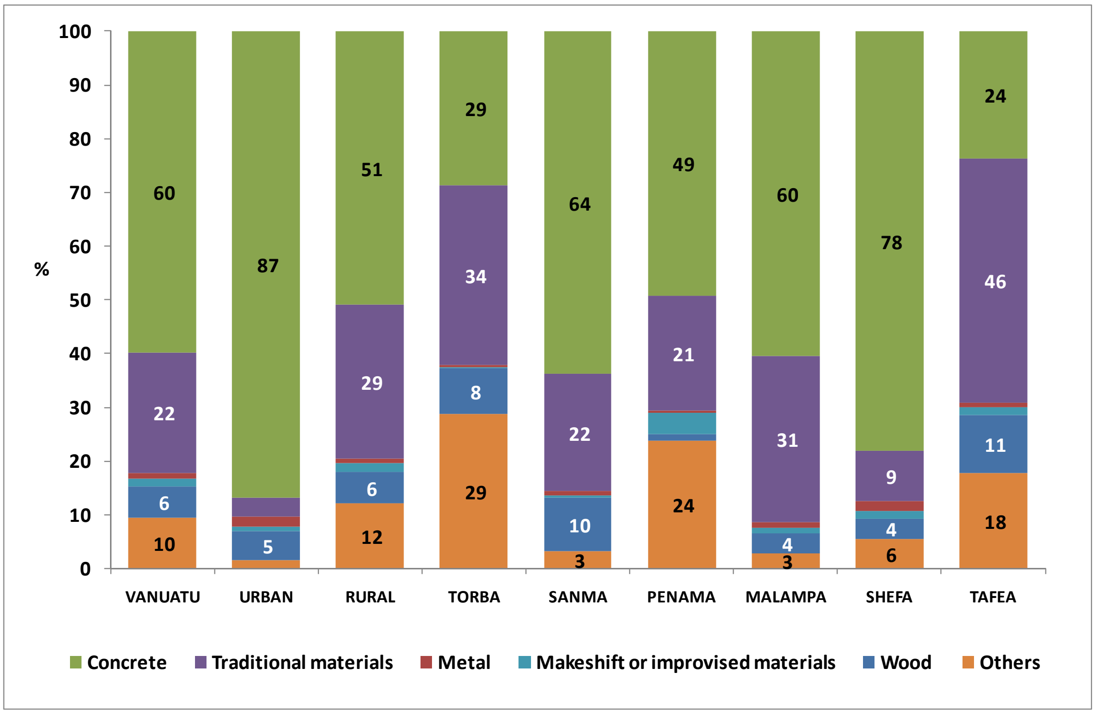


Figure 136: Proportion of private households by place of residence and main type of material used for the floors of dwelling (%), Vanuatu: 2009



5.5.6 Private households by water source for drinking and washing

The distribution of Vanuatu dwellings by main source of drinking water is displayed in Figure 137. It shows that the majority of dwellings (27%) used a shared pipe, another 19% used a village tank, 18% used private pipe, 15% used household tanks and 11% used the river or lake or spring.

Private piped water was widely used in the urban areas (43%) compared to in the rural areas.

The main source of drinking water varies widely between provinces.

The distribution of dwellings by main source of washing water is displayed in Figure 138. It shows the great variation by main source of washing water in the provinces.

Figure 137: Proportion of private households by place of residence and main source of drinking water (%), Vanuatu: 2009

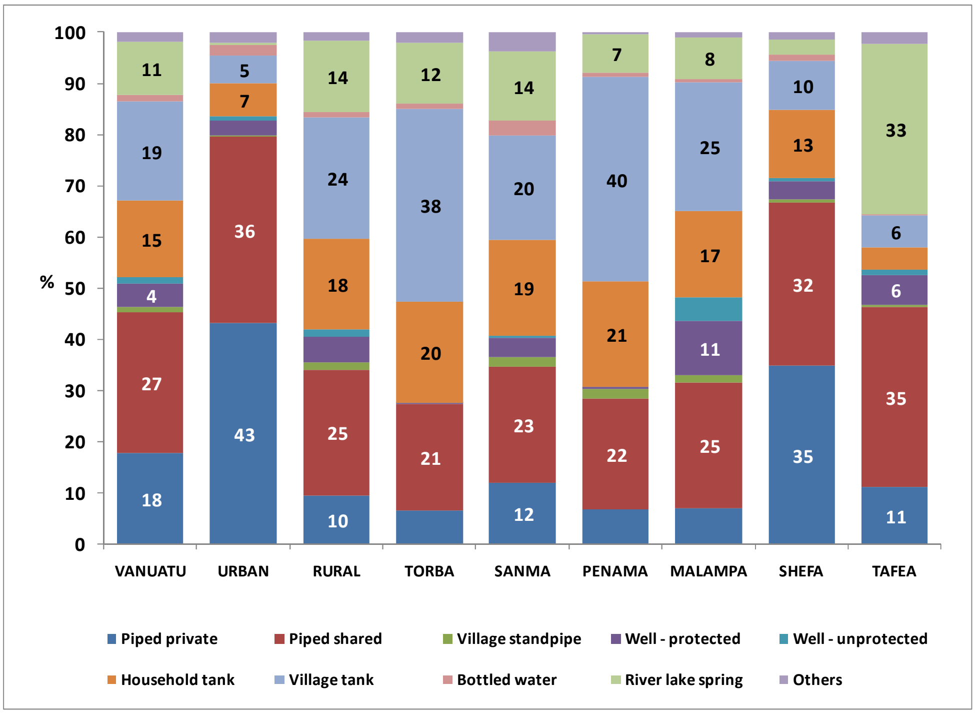
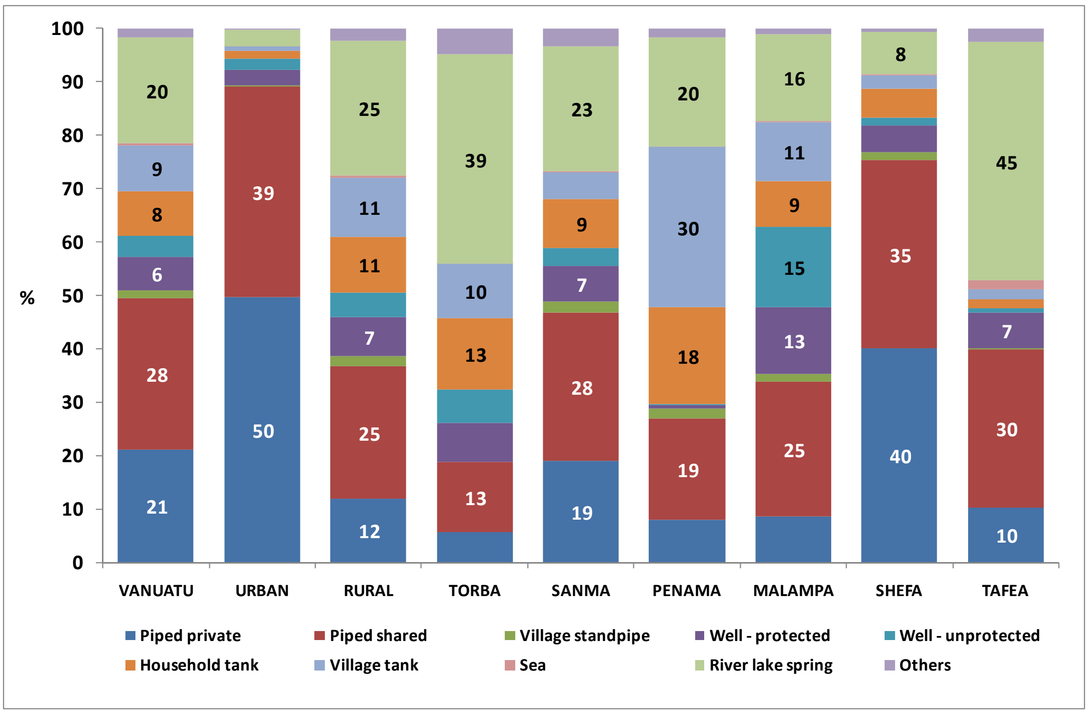


Figure 138: Proportion of private households by place of residence and main source of washing water (%), Vanuatu: 2009



5.5.7 Private households by main energy source for lighting and cooking

The main source of energy for lighting in Vanuatu was the kerosene lamp used by 48% of all households (Fig.139). A further 28% of all households used electricity - main grid. Not surprisingly the urban areas and Shefa province shared the highest usage of electricity main grid.

Torba province had with 37%, the highest number of households using a Coleman lamp as their main energy source of lighting.

The main source of energy for cooking was wood/coconut shells and used by 85% of all households in Vanuatu (Fig.140). Thirteen percent of all households used gas. However, gas usage was more dominant in the urban areas and Shefa province compared to the other provinces where the use of wood/coconut shells was preferred.

Figure 139: Proportion of private households by place of residence and main source of lighting (%), Vanuatu: 2009

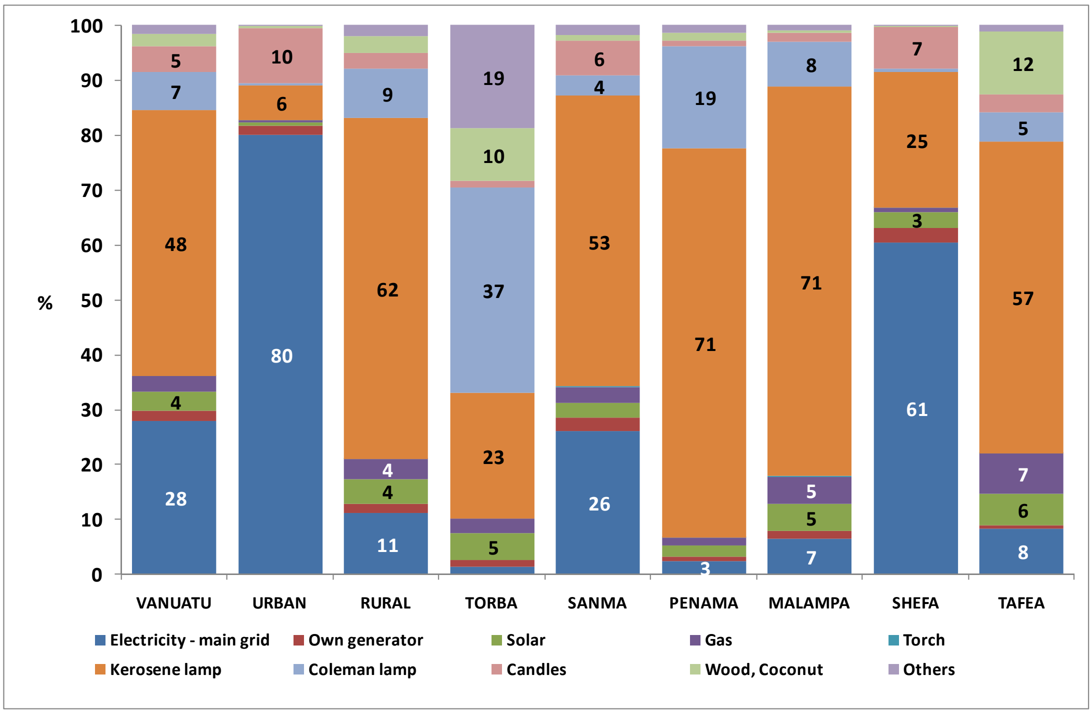
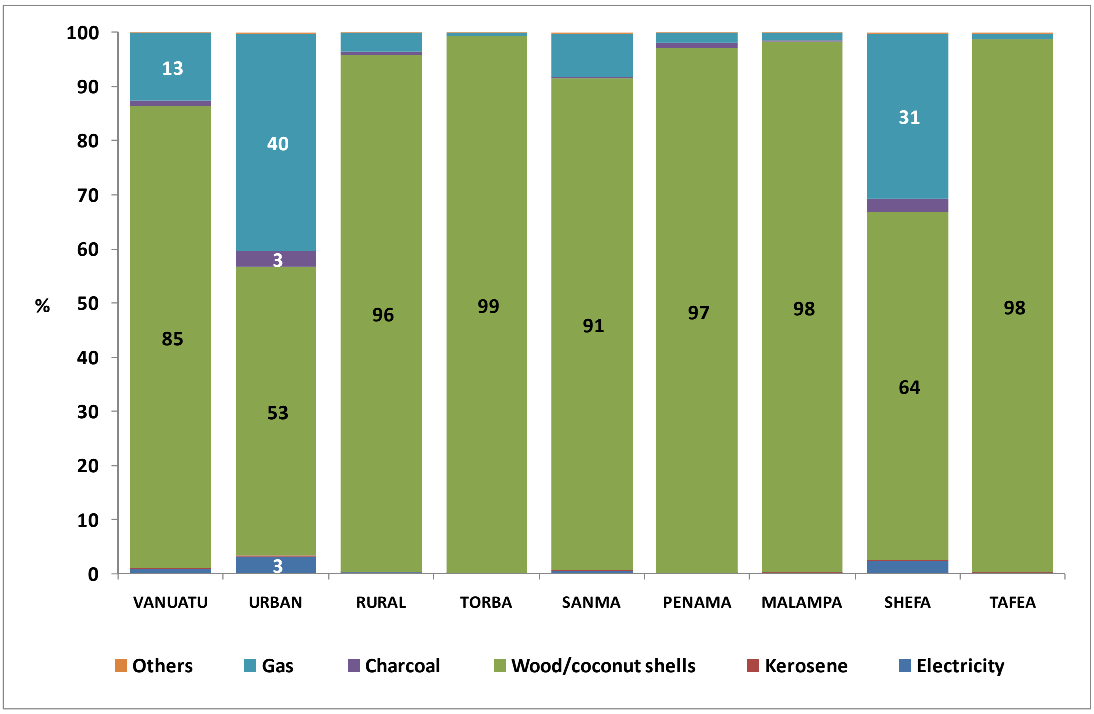


Figure 140: Proportion of private households by place of residence and main source for cooking (%), Vanuatu: 2009



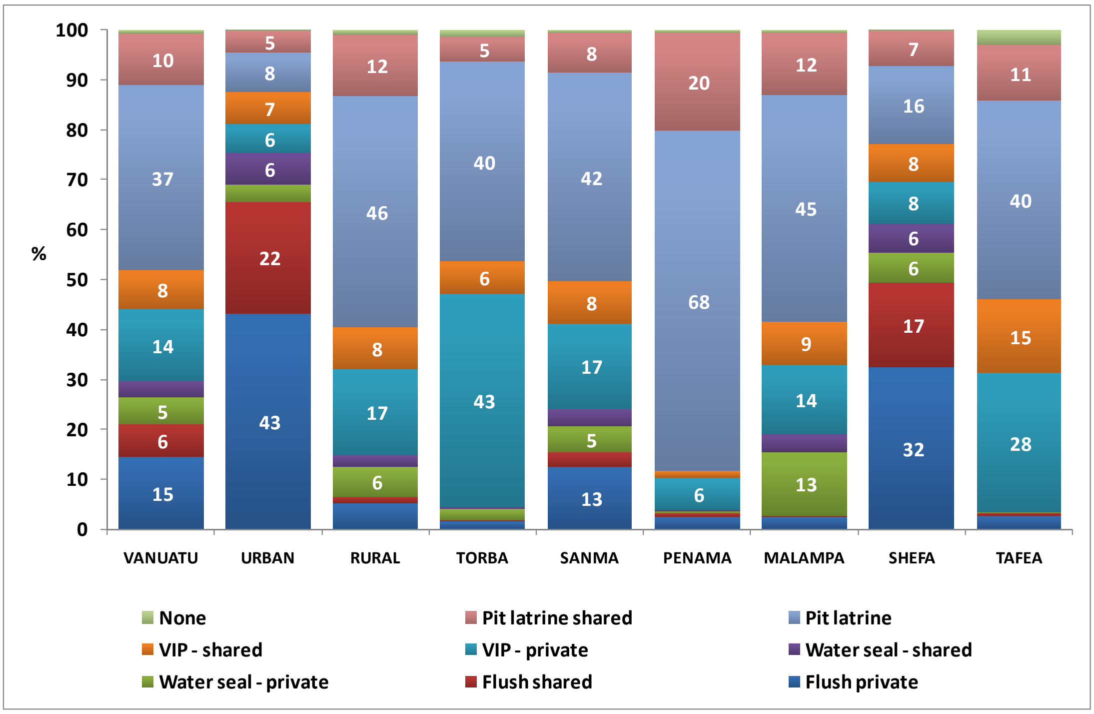
5.5.8 Private households by main toilet facility

At 37%, the private pit latrine was the main toilet facility used in Vanuatu (Fig.141). Fifteen percent of all household used flushed private toilets, 14% used private VIP[10], 10% used pit latrine-shared and 8 used shared VIP toilets.

Forty three percent of all urban households used a flush private toilet and 22% households used a shared flush toilet. Rural areas tend to use a private pit latrine, a private VIP and shared pit latrine toilet facility.

[10] The ventilated improved pit latrine, or VIP, is a pit toilet with a pipe (vent pipe) fitted to the pit, and a screen (fly screen) at the top outlet of the pipe. VIP latrines are an improvement to overcome the disadvantages of simple pit latrines, i.e. fly and mosquito nuisance and unpleasant odors. The smell is carried upwards by the chimney effect and flies are prevented from leaving the pit and spreading disease. (Wikipedia, the free encyclopedia [online]).

Figure 141: Proportion of private households by place of residence and main type of toilet facility (%), Vanuatu: 2009



5.5.9 Private households by means of communication

Only 4% of all households in the Vanuatu had a landline phone available (Fig.142). However 11% of urban households had a landline phone.

The majority of households in Vanuatu (76%) had access to mobile phones (Fig.143). 91% of urban households owned a mobile phone compared to 71% of rural households. The percentage of households owning a mobile phone in Torba was, with 10%, very low.

The number of households with an internet connection was very low in Vanuatu; only 3% of all households had access to internet (Fig.144). Nine percent of household in urban areas had access to the internet.

Figure 142: Proportion of private households by place of residence and availability of a telephone (land-line) (%), Vanuatu: 2009

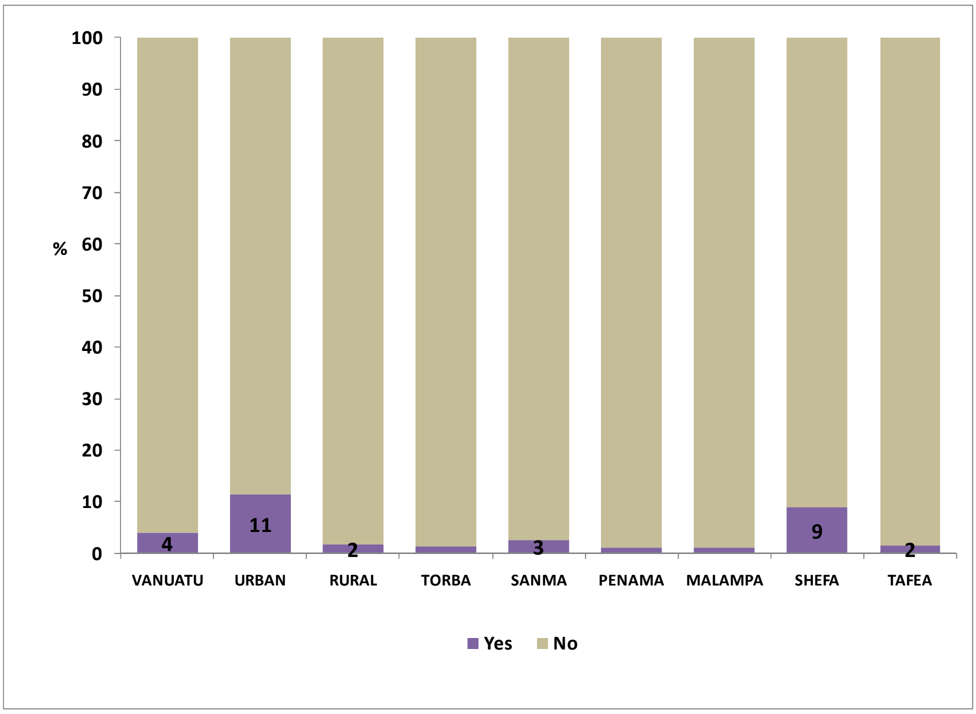


Figure 143: Proportion of private households by place of residence and availability of a mobile phone (%), Vanuatu: 2009

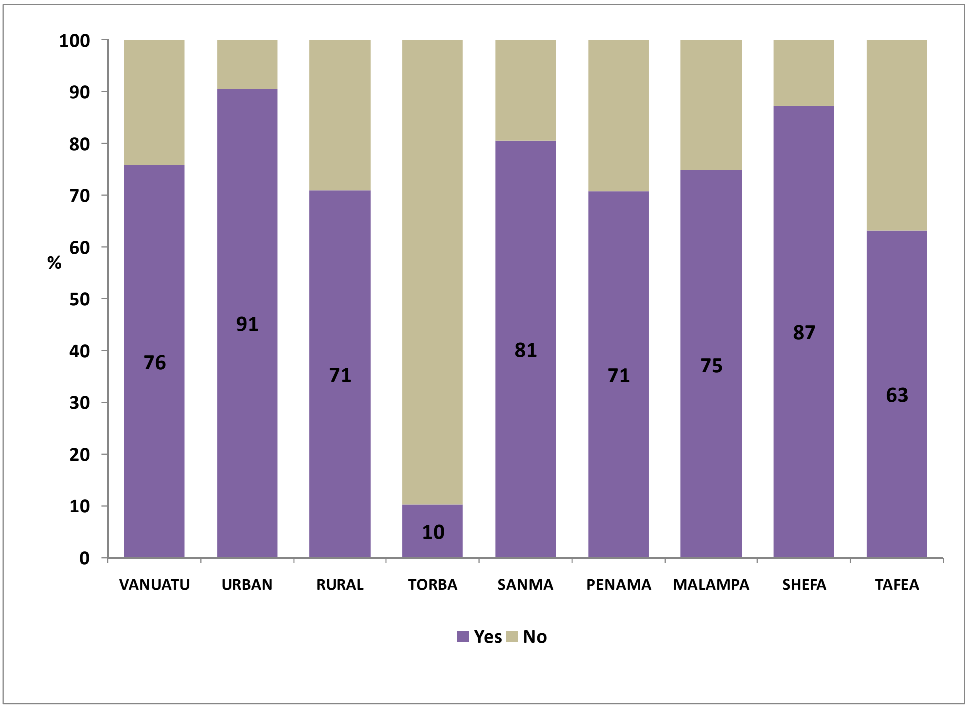
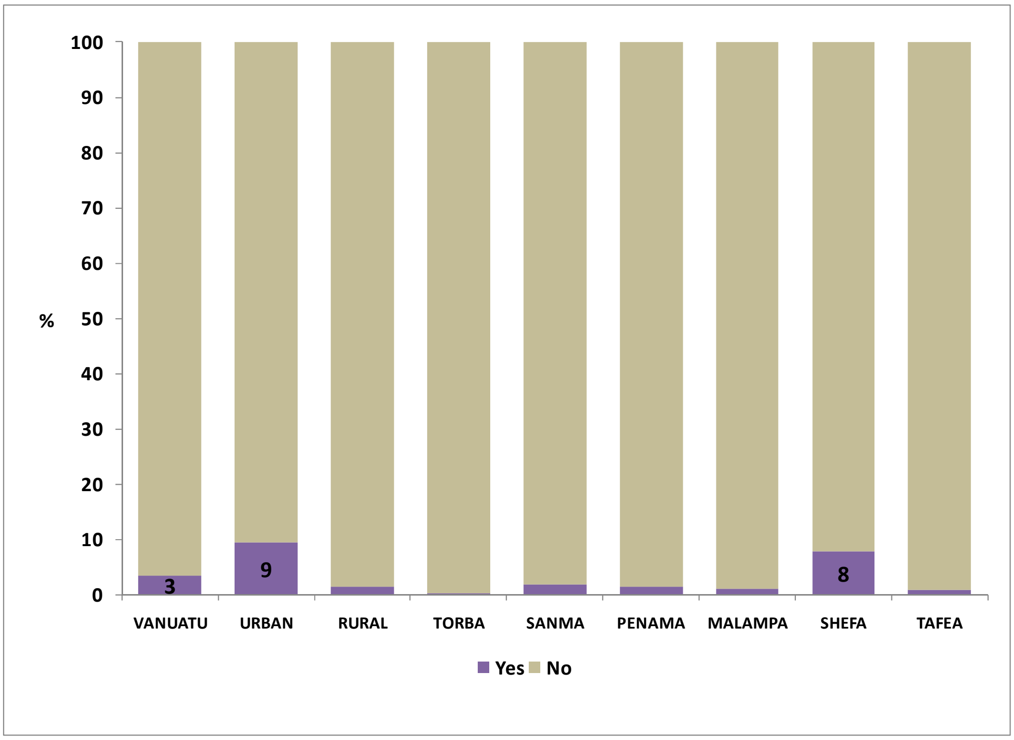


Figure 144: Proportion of private households by place of residence and accessibility to the Internet connection (%), Vanuatu: 2009



5.5.10 Private households by main means of waste disposal

During the 2009 census, information was collected with respect to how households manage their waste. There were 8 different means of waste disposal in Vanuatu: Authorized waste collection, taken to a central place, burning, recycling, lagoon/ocean/stream, burying, composting and others means of waste disposal.

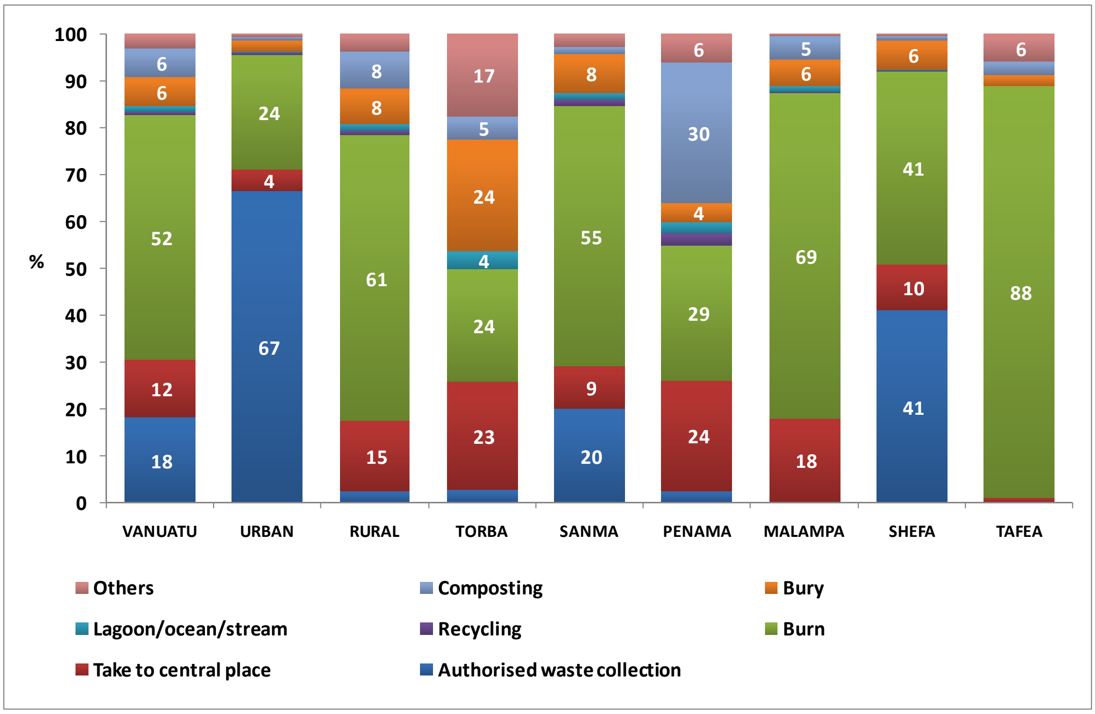
In Vanuatu, 52% of all households burned waste, 18% used authorized waste collection and 12% took waste to a central place (Fig.145).

Urban areas had 67% of households who used the authorized waste collection. In contrast, there was very little waste collection in the rural areas.

Burning waste was widely used by rural households (61%) as the main means of waste disposal compared to the 24% of urban households.

Four percent of all households in Torba used the lagoon or ocean or stream to dispose of waste.

Figure 145: Proportion of private households by place of residence and main mode of waste disposal (%), Vanuatu: 2009



5.5.11 Private households involved in agricultural cash crop and fisheries activities

The 2009 census included several questions on whether the households were engaged in agricultural and fisheries activities.

In general, agricultural cash cropping involvement was more common in the rural areas compared to the urban areas. For Vanuatu, 48% of all households were involved in kava agricultural activity, 50% in coconut, 18% cocoa, 15% vanilla, 13% sandalwood, 3% coffee, 2% pepper and 18% involved in other agricultural cash crop activities.

The province with the highest involvement in kava cultivation was Penama province where 84% of all households were engage in kava agricultural activity (Fig.146). This is in contrast to urban households who had only 3% of its household engaged in kava activity.

Malampa province led the coconut agricultural activity, by having 88% of its household engaged in coconut cultivation (Fig.147). The urban areas again recorded the lowest proportion of households engaged in this activity (4%).

Table 44 shows the engagement of households in other agricultural cash crops such as cocoa, coffee, sandalwood, pepper, vanilla and other crops.

Figure 146: Proportion of private households by place of residence and agricultural activities (%), Kava, Vanuatu: 2009

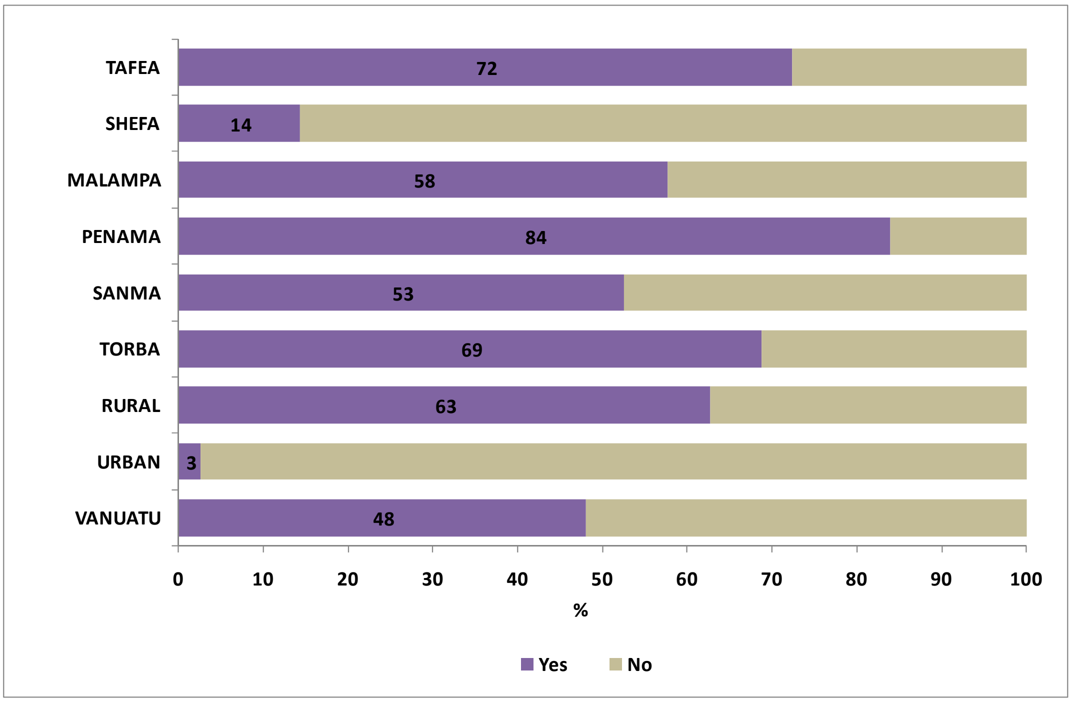


Figure 147: Proportion of private households by place of residence and agricultural activities (%), Coconut, Vanuatu: 2009

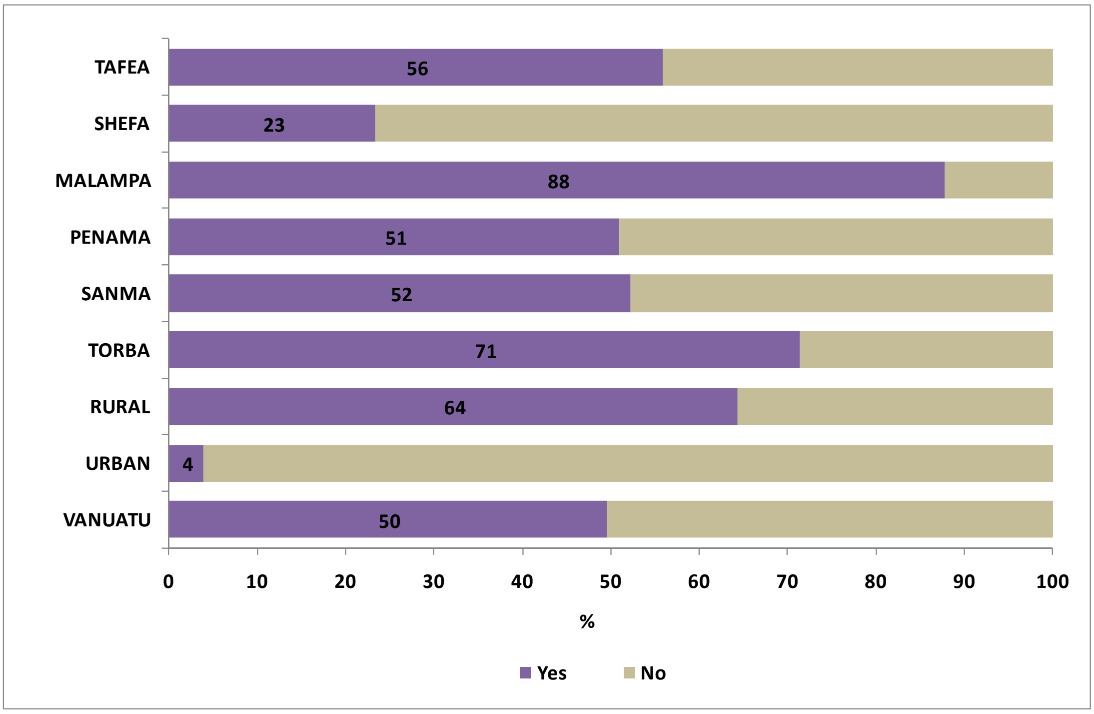


Table 44: Proportion of private households by place of residence and agricultural activity (%), Vanuatu: 2009

Place of residence	Cocoa		Coffee		Sandalwood		Pepper		Vanilla		Other crops	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
VANUATU	**18**	**82**	**3**	**97**	**13**	**87**	**2**	**98**	**15**	**85**	**18**	**82**
URBAN	0	100	0	100	1	99	0	100	2	98	3	97
RURAL	24	76	4	96	17	83	2	98	19	81	23	77
TORBA	4	96	0	100	5	95	2	98	9	91	11	89
SANMA	20	80	0	100	11	89	3	97	21	79	13	87
PENAMA	18	82	0	100	4	96	2	98	24	76	46	54
MALAMPA	64	36	1	99	11	89	3	97	27	73	10	90
SHEFA	3	97	1	99	6	94	0	100	5	95	15	85
TAFEA	1	99	19	81	54	46	1	99	9	91	17	83

Fisheries included two types of fishing activities namely marine fishing and fresh water fishing activity and the census included several questions on whether the households were engaged in fisheries activities for subsistence, sale or both.

The data shows that 32% of all households in Vanuatu were engaged in marine fishing; 26% were engaged but only for subsistence and a further 6% of households were engaged in marine fishing for both subsistence and sale purposes (Fig. 148).

Furthermore, 17% of all households in Vanuatu were engaged in fresh water fishing. Of this number, 15% were engaged for subsistence purposes (Fig.149).

Torba province has most of its households (57%) engaged in marine fishing but mainly as subsistence activities (Fig. 148).

Figure 148: Proportion of private households by place of residence and marine fishing activities (%), Vanuatu: 2009

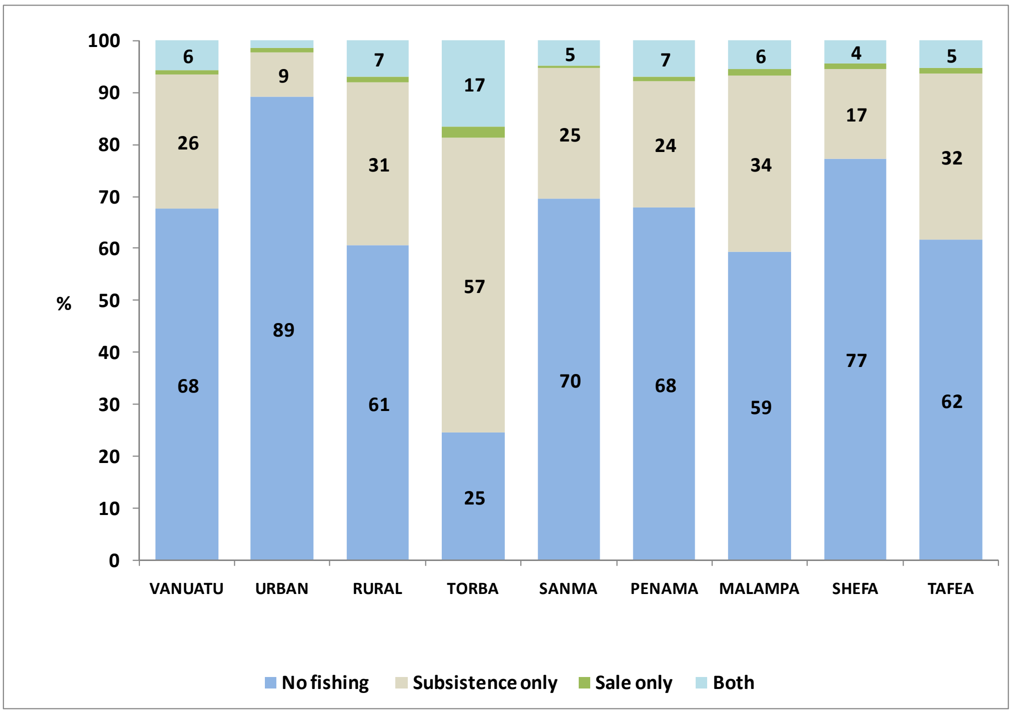
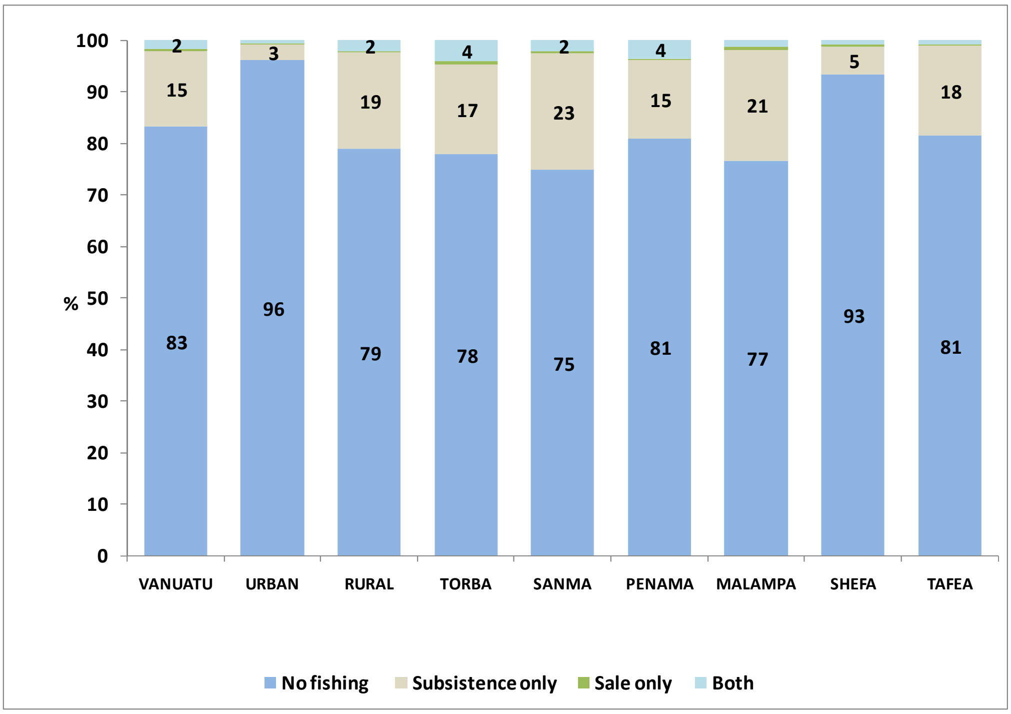


Figure 149: Proportion of private households by place of residence and fresh water fishing activities (%), Vanuatu: 2009



5.5.12 Private households owning or raising livestock

The following section provides an overview on the number of livestock counted (Table 45), and the proportion of households that raise or own livestock (Figs.150 to 154).

In general, livestock such as chickens (64%), pigs (45%) and cattle (29%) were commonly raised by households in Vanuatu, but only a few households raised goats (8%) and horses (3%).

Table 45: Total number of livestock, Vanuatu: 2009

Place of residence	Number of livestock				
	Pigs	Goats	Cattle	Horses	Chickens
VANUATU	**108,056**	**34,086**	**105,051**	**5,559**	**468,779**
URBAN	*9,236*	*8,622*	*7,592*	*1,076*	*23,114*
RURAL	*98,820*	*25,464*	*97,459*	*4,483*	*445,665*
TORBA	2,718	1,152	2,298	65	17,925
SANMA	16,107	8,403	48,116	2,233	99,596
PENAMA	25,279	3,704	11,479	271	110,041
MALAMPA	17,061	1,969	17,705	316	91,404
SHEFA	24,080	13,068	16,169	1,612	90,205
TAFEA	22,811	5,790	9,284	1,062	59,608

Figure 150: Proportion of private households by place of residence raising pigs (%), Vanuatu: 2009

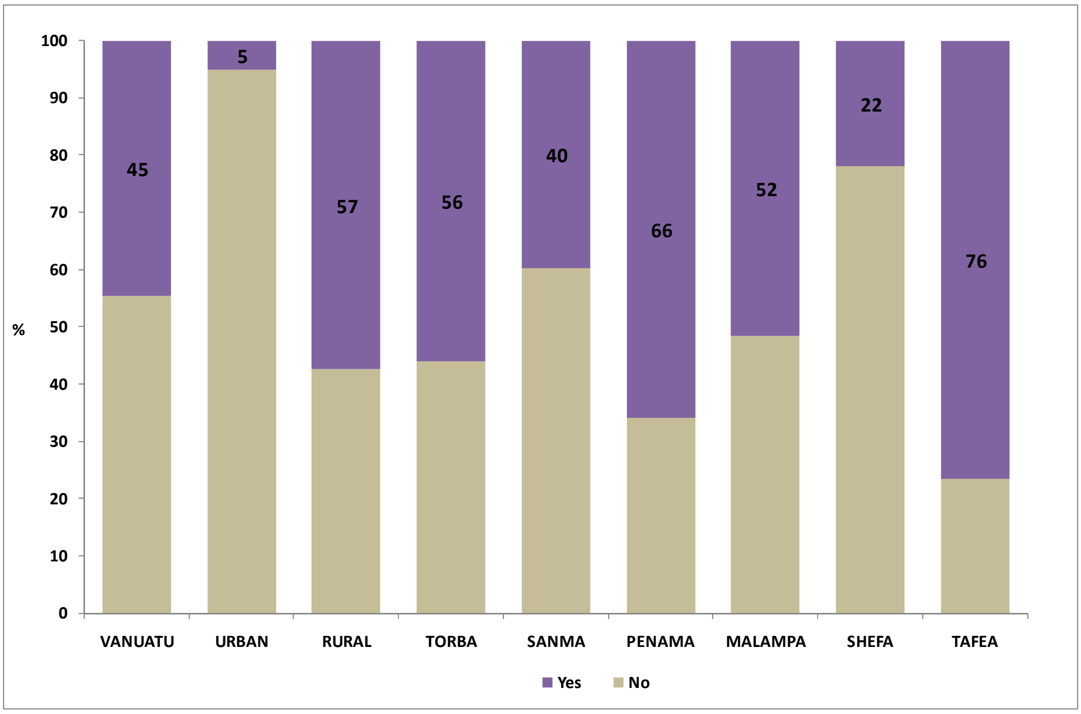


Figure 151: Proportion of private households by place of residence raising goats (%), Vanuatu: 2009

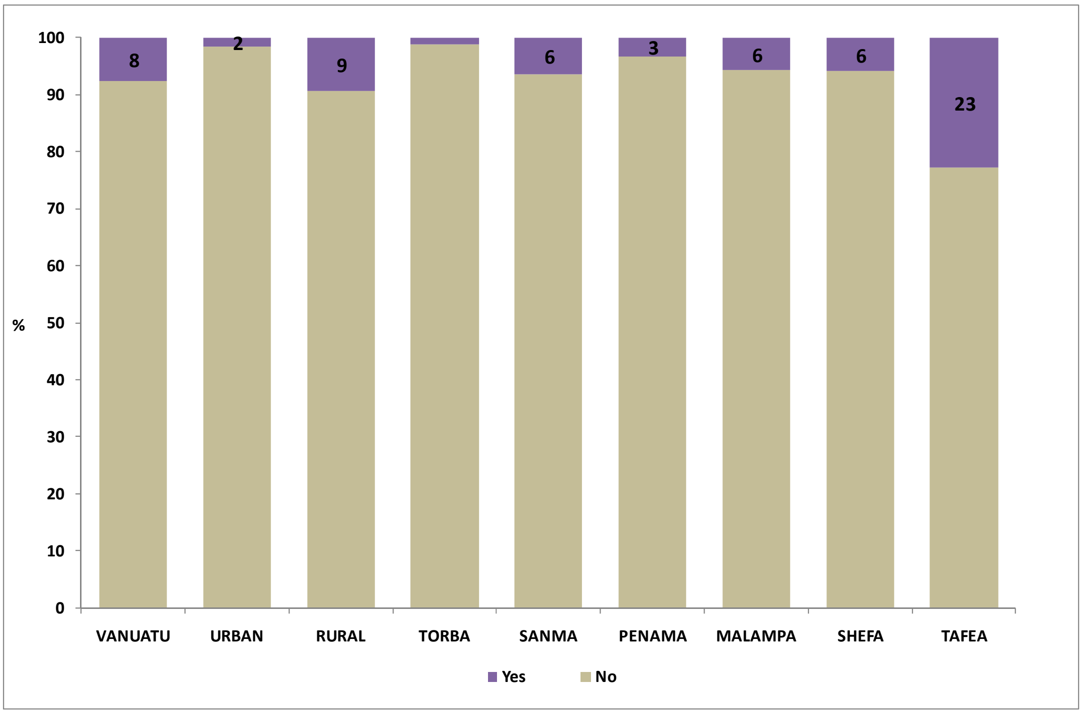


Figure 152: Proportion of private households by place of residence raising cattle (%), Vanuatu: 2009

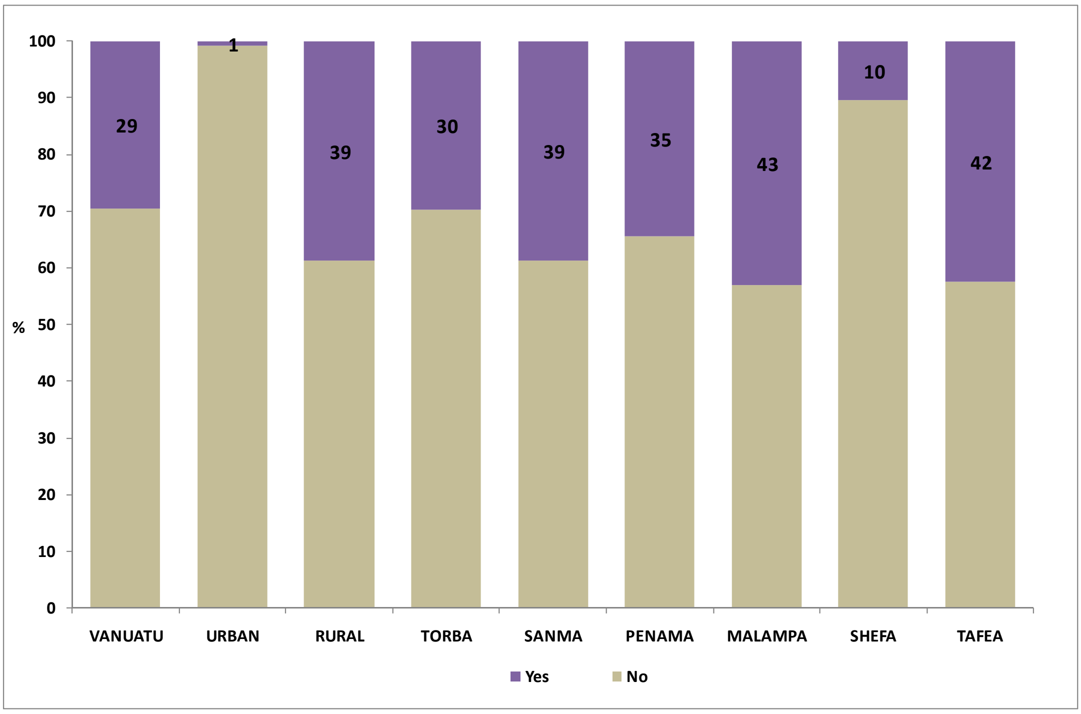


Figure 153: Proportion of private households by place of residence raising horses (%), Vanuatu: 2009

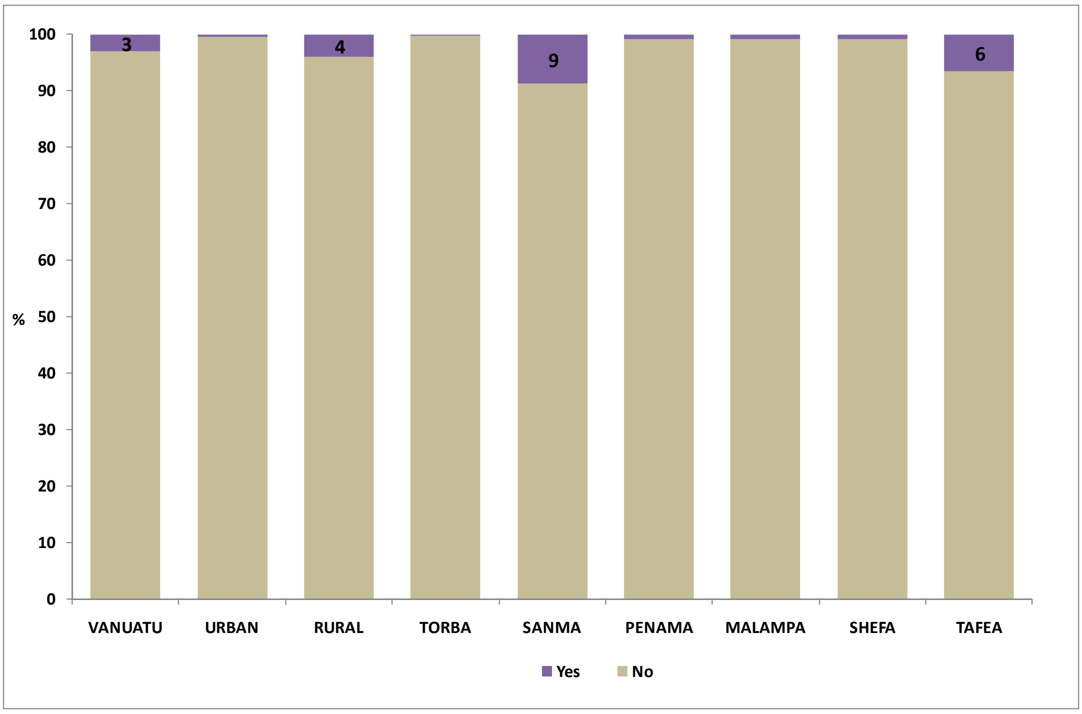
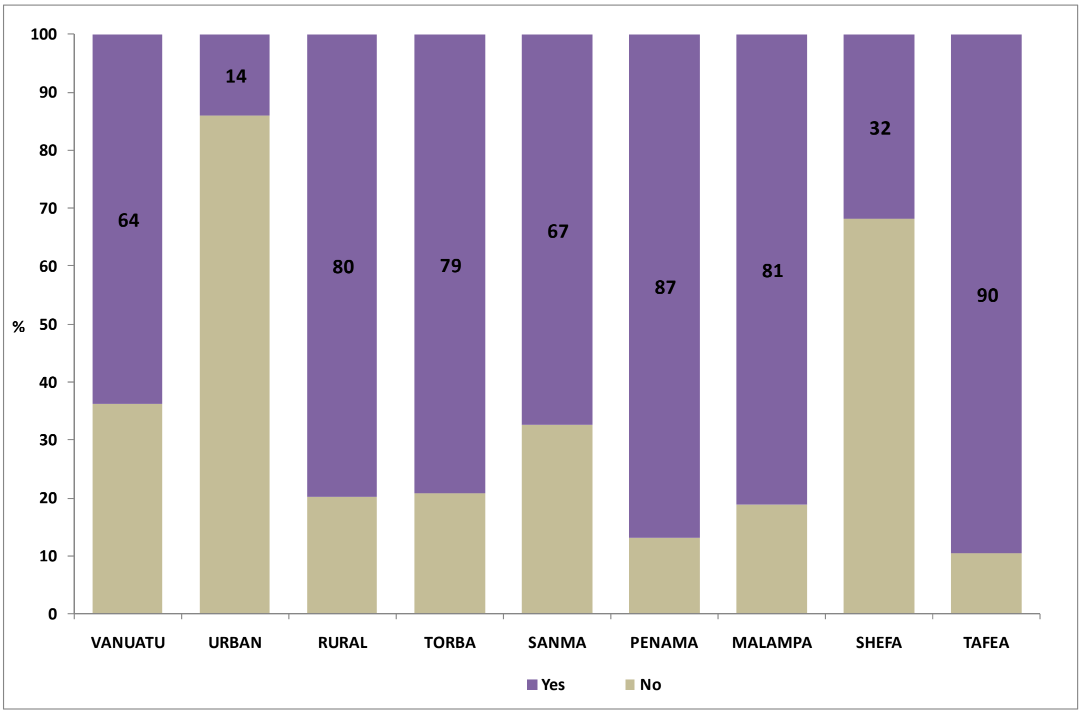


Figure 154: Proportion of private households by place of residence raising chicken (%), Vanuatu: 2009



5.5.13 Private households and availability of various household items

This section briefly summarizes the availability of a variety of household items and appliances.

The different sections include a summary table presenting the total number of items by place of residence.

Subsequently graphs are added that show the proportion of households by place of residence with at least one item that is in working order. It excludes any items that were broken, borrowed or rented. The graphs therefore are simply divided into two categories: 'yes' if the household owns the item or 'no' if it does not own the item.

5.5.13.1 Private households and availability of kitchen appliances

In 2009. 27% of all households in Vanuatu had gas stoves; 15% in rural areas and 65% in urban households (Table 46 and Fig. 155).

Figure 156 shows that, 13% of all households in Vanuatu had a fridge or freezer; 6% and 37% of rural and urban households had this kitchen appliance.

Table 46: Number of items of cooking appliances by place of residence, Vanuatu: 2009

Place of Residence	Item	
	Gas stove	Fridge/Freezer
VANUATU	**14,024**	**7,670**
URBAN	8,024	5,090
RURAL	6,000	2,580
TORBA	104	45
SANMA	2,519	1,179
PENAMA	802	230
MALAMPA	1,086	322
SHEFA	8,945	5,657
TAFEA	568	237

Figure 155: Proportion of private households by place of residence and availability of a gas stove (%), Vanuatu: 2009

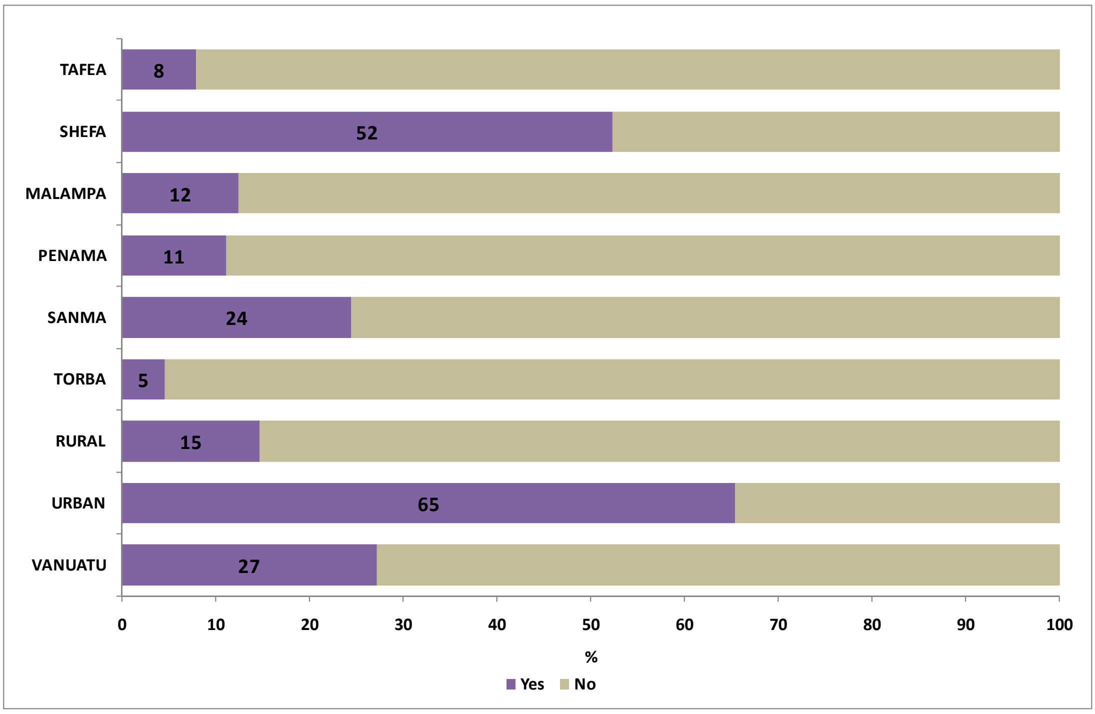
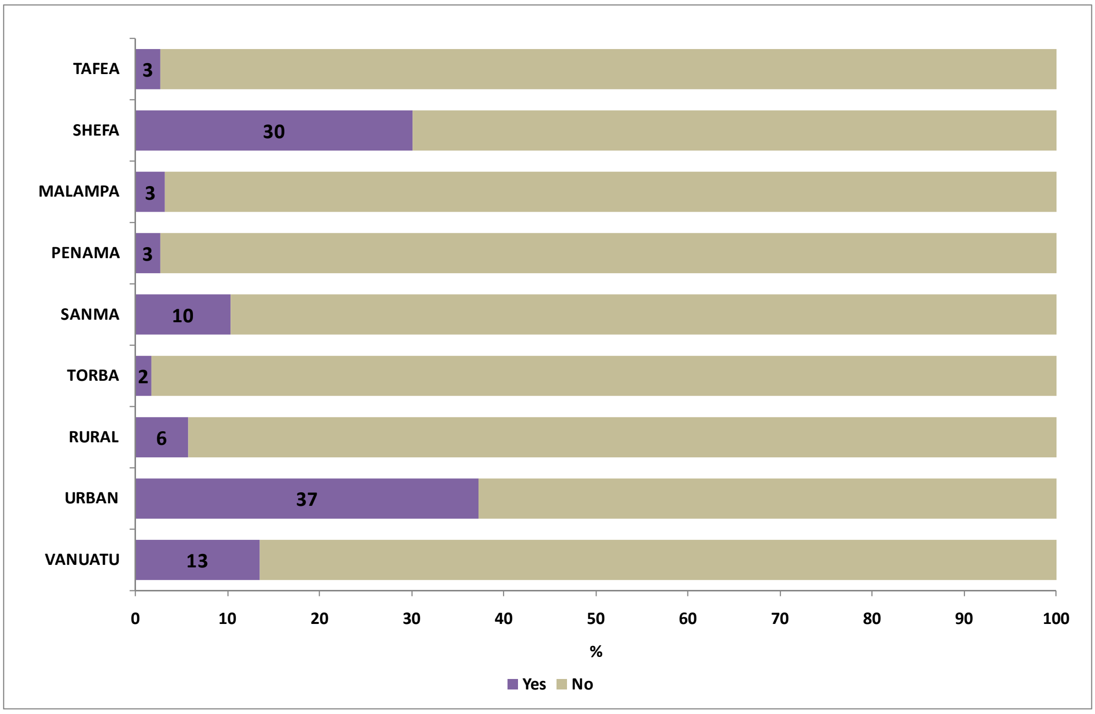


Figure 156: Proportion of private households by place of residence and availability of a Fridge/Freezer (%), Vanuatu: 2009



5.5.13.2 Private households and availability of entertainment appliances

A minority of households in Vanuatu had the following entertainment appliances; radio (35%), TV (37%), computer (8%) and a DVD player (36%) (Table 47 and Figs. 157 to 160).

However, it is a different scenario when comparing urban and rural households as more urban households had access to radio (53%), TV (72%), computer (22%) and DVD players (68%).

Table 47: Number of items of entertainment appliances by place of residence, Vanuatu: 2009

Place of residence	Item			
	TV Screen	Radio	Computer	DVD Deck
VANUATU	**19,583**	**18,046**	**4,979**	**19,963**
URBAN	9,354	6,771	3,458	9,050
RURAL	10,229	11,275	1,521	10,913
TORBA	306	384	59	342
SANMA	3,658	3,876	677	3,902
PENAMA	1,359	1,884	154	1,458
MALAMPA	2,055	2,083	177	2,313
SHEFA	10,974	8,702	3,700	10,677
TAFEA	1,231	1,117	212	1,271

Figure 157: Proportion of private households by place of residence and availability of a radio (%), Vanuatu: 2009

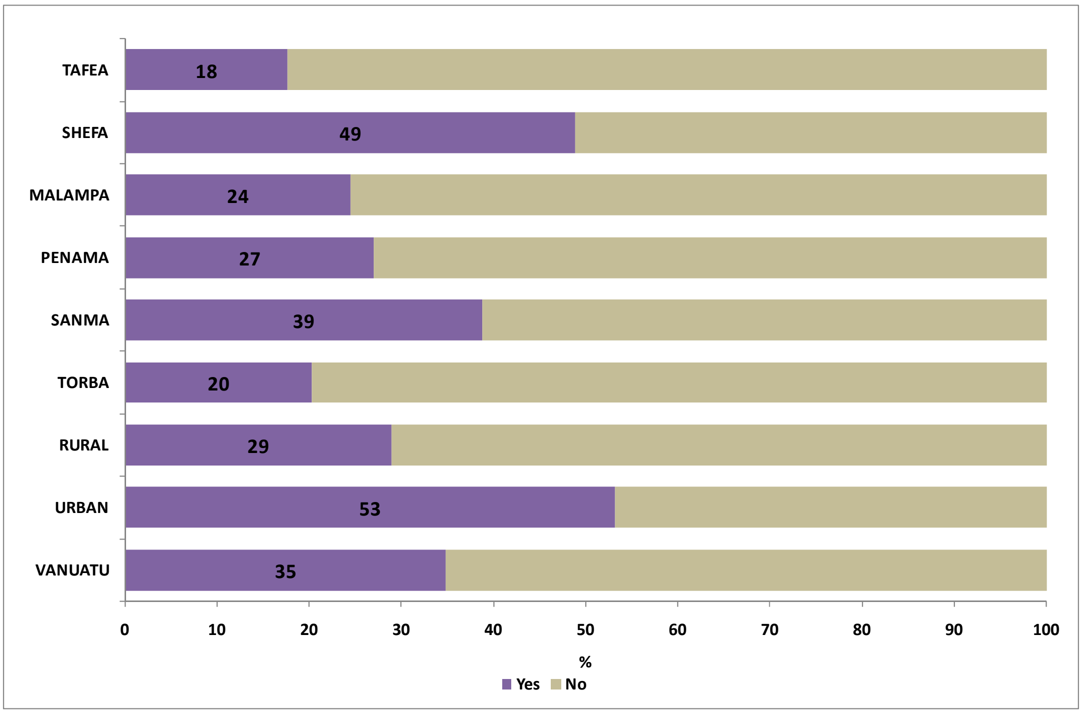


Figure 158: Proportion of private households by place of residence and availability of a TV (%), Vanuatu: 2009

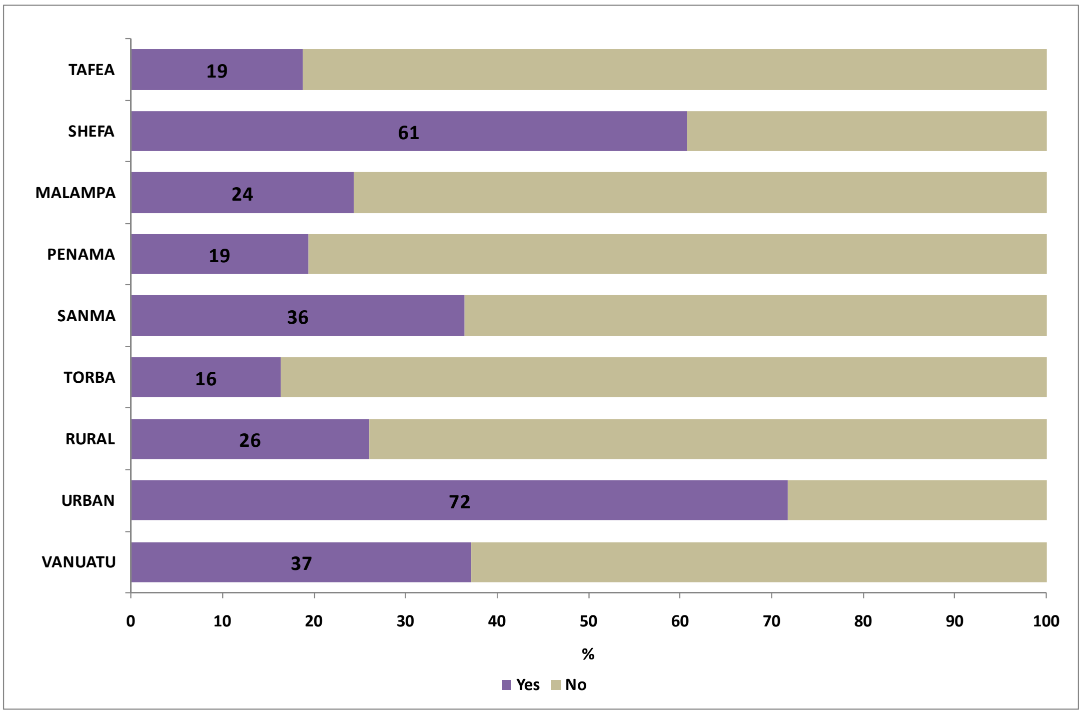


Figure 159: Proportion of private households by place of residence and availability of a computer (%), Vanuatu: 2009

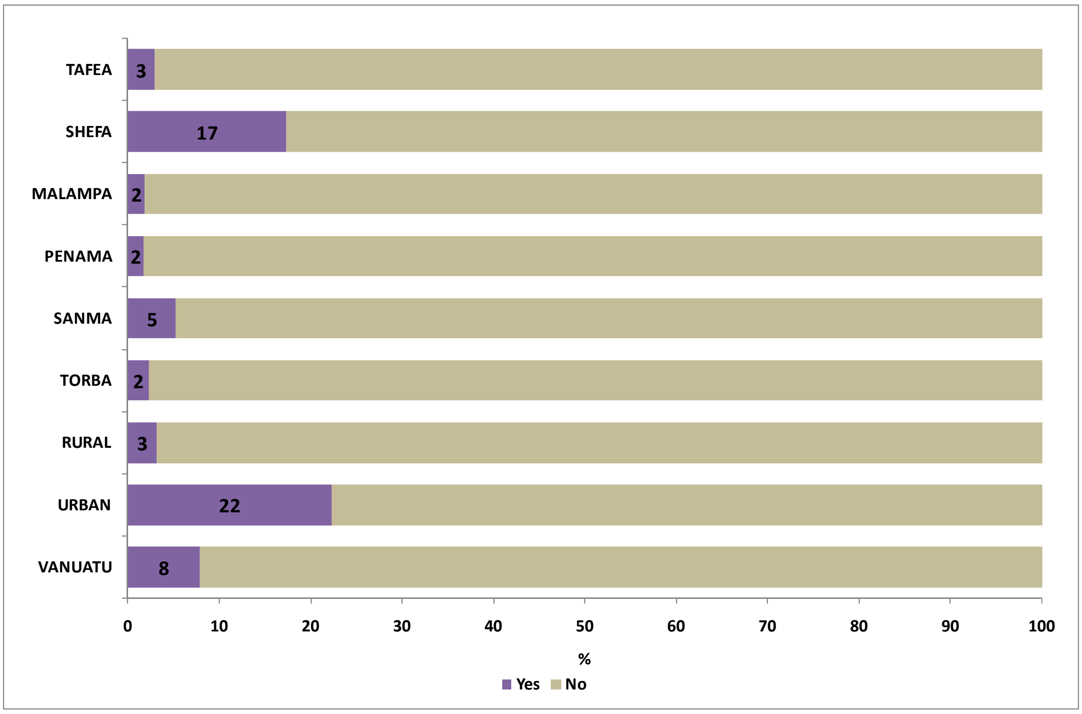
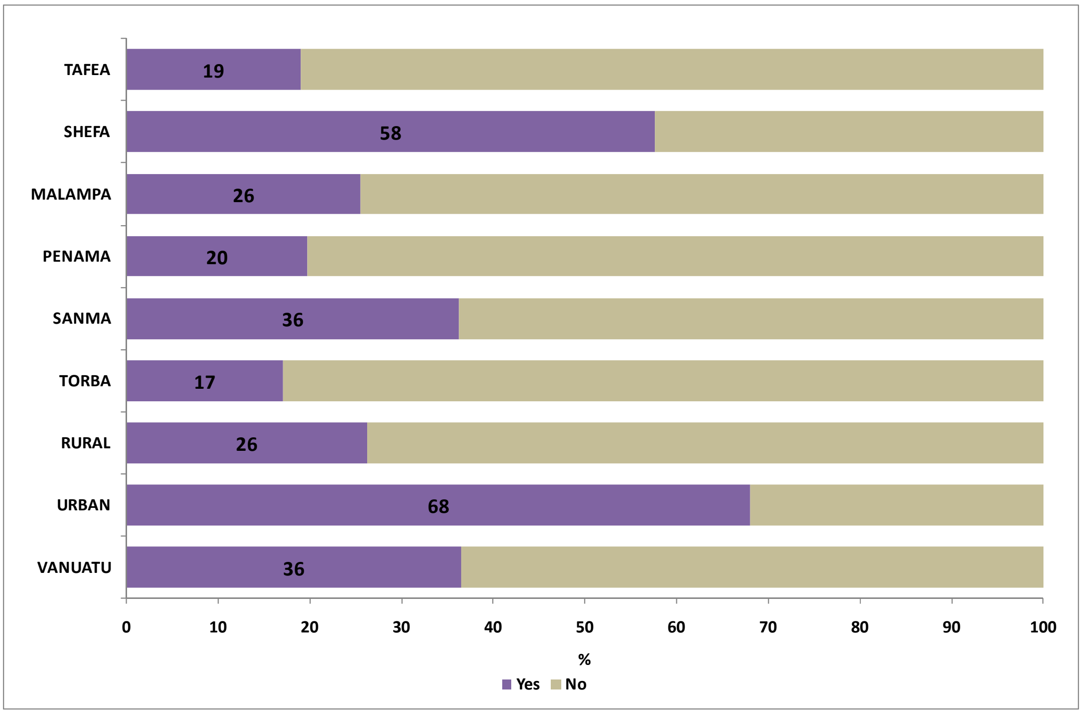


Figure 160: Proportion of private households by place of residence and availability of a DVD player (%), Vanuatu: 2009



5.5.13.3 Private households and availability of various means of transport

Only a minority of households in Vanuatu had the following means of transport; motor vehicle (7%), motor bike (2%), boat 3%) and canoe (10%). Figures 161 to 164 and Table 48) display these various transportation means by place of residence.

Table 48: Number of transport items by place of residence, Vanuatu: 2009

Place of residence	Item			
	Motor vehicle	Motorbike	Boat	Canoe
VANUATU	**4,698**	**1,158**	**1,601**	**5,982**
URBAN	2,999	423	394	293
RURAL	1,699	735	1,207	5,689
TORBA	9	22	43	646
SANMA	818	198	421	1,051
PENAMA	149	52	131	607
MALAMPA	179	187	252	2,143
SHEFA	3,328	612	600	876
TAFEA	215	87	154	659

Figure 161: Proportion of private households by place of residence and availability of a motor vehicle (%), Vanuatu: 2009

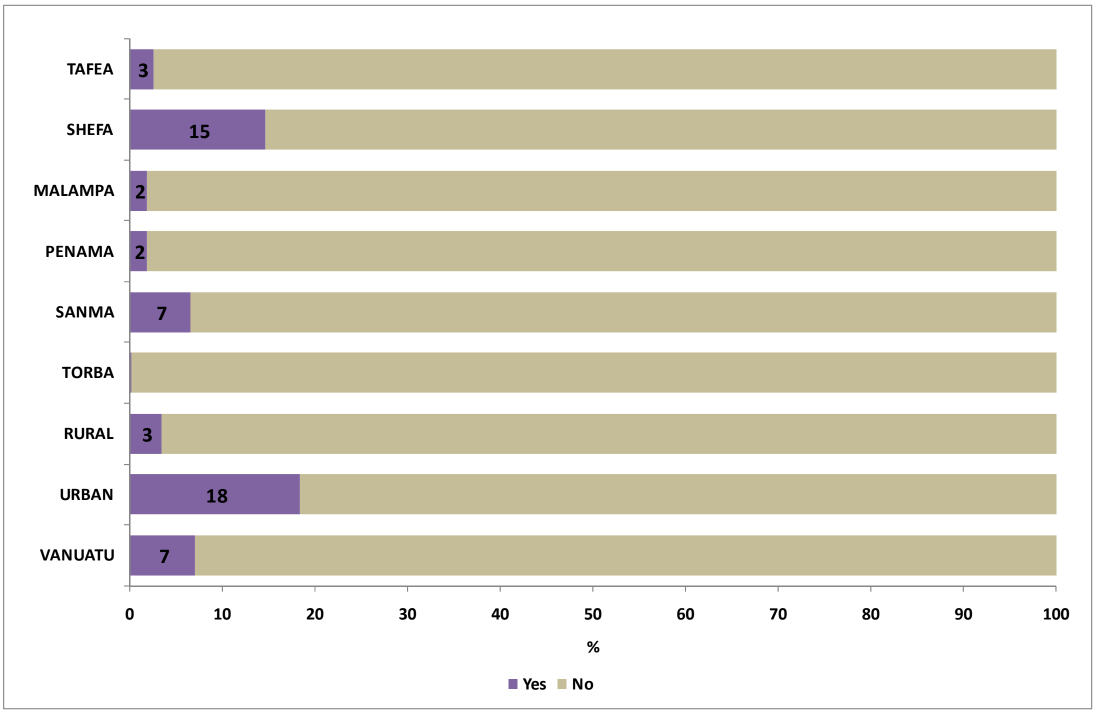


Figure 162: Proportion of private households by place of residence and availability of a motor bike (%), Vanuatu: 2009

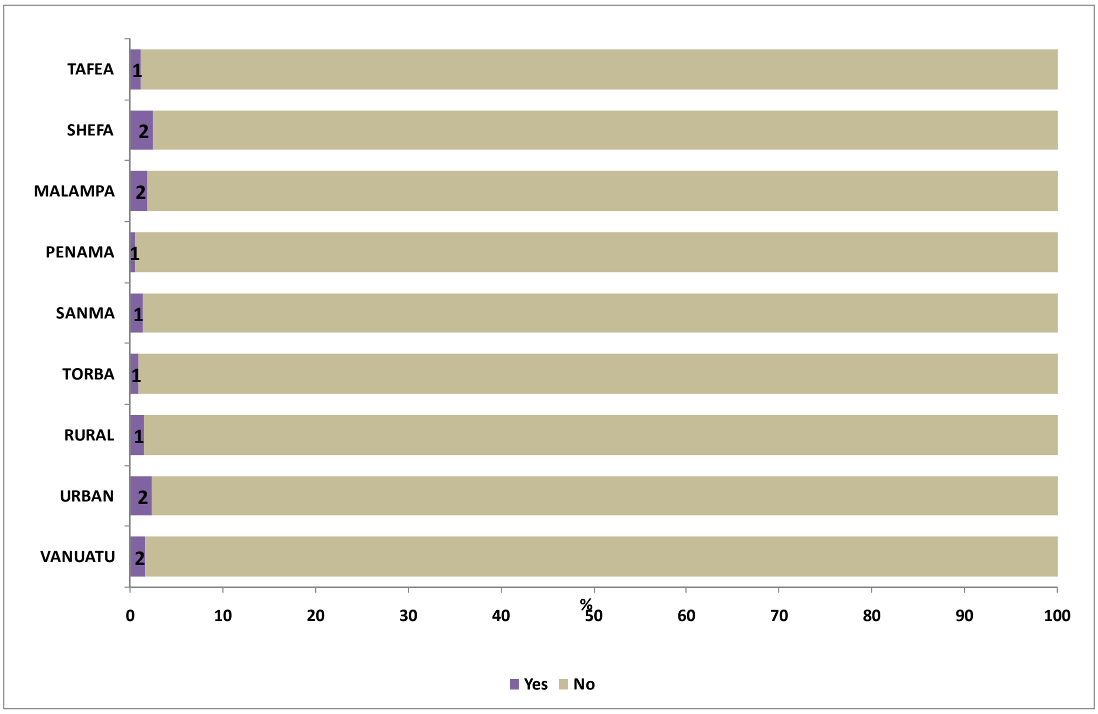


Figure 163: Proportion of private households by place of residence and availability of a boat (%), Vanuatu: 2009

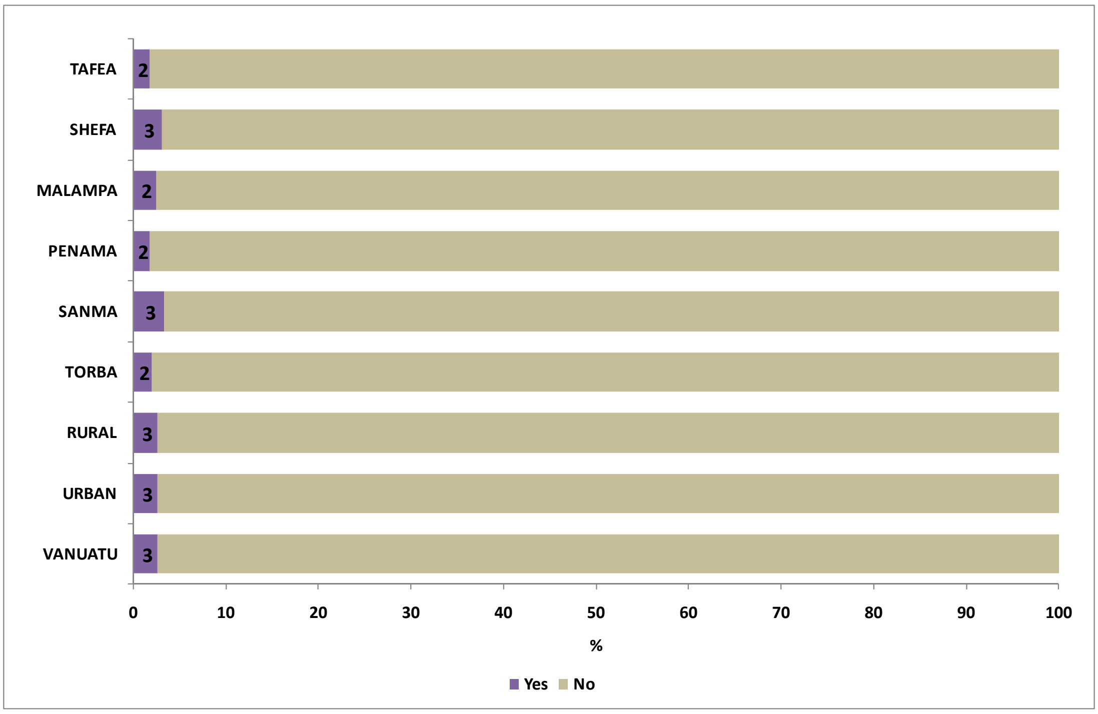
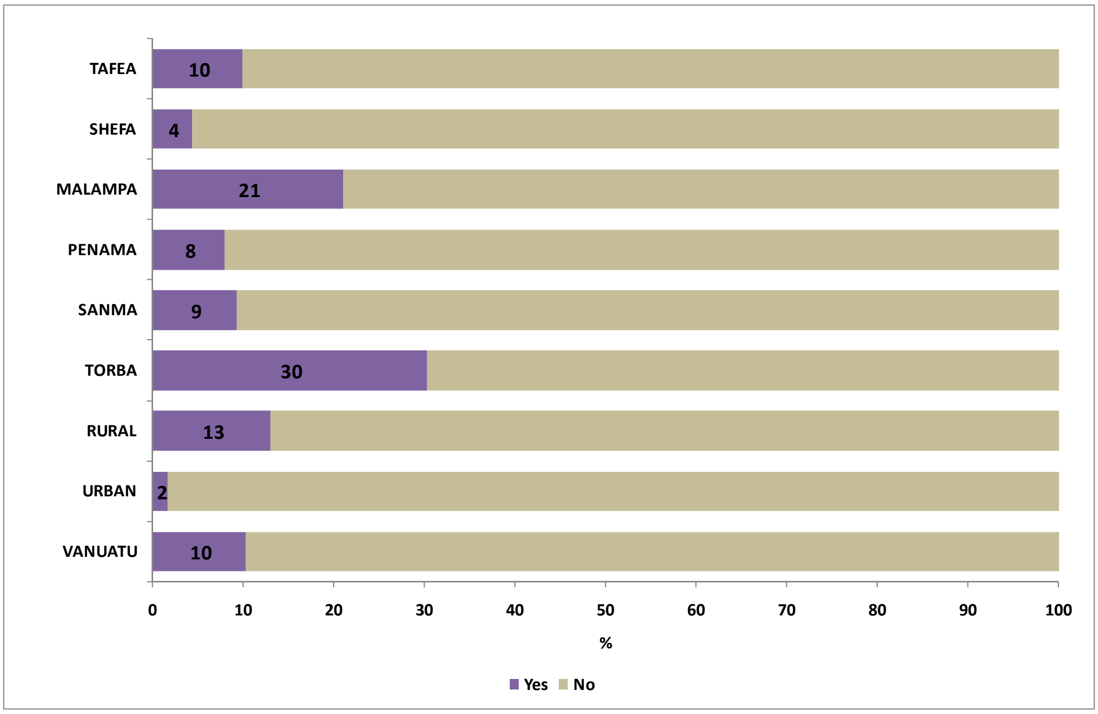


Figure 164: Proportion of private households by place of residence and availability of a canoe (%), Vanuatu: 2009



5.5.13.4 Private households and availability of other appliances

Ownership of household appliances such as generator and lawn mowers was asked in the 2009 population census of which 18% and 10% of households in Vanuatu stated that they have access to both. Table 49 and Figures 165 and 166 display their availability by place of enumeration.

Table 49: Number of other household appliances by place of residence, Vanuatu: 2009

Item	Place of residence								
	VANUATU	URBAN	RURAL	TORBA	SANMA	PENAMA	MALAMPA	SHEFA	TAFEA
Generator	9,287	1,287	8,000	339	2,049	1,548	1,854	2,671	826
Mower	5,681	2,053	3,628	45	1,142	535	527	2,956	476

Figure 165: Proportion of private households by place of residence and availability of a generator (%), Vanuatu: 2009

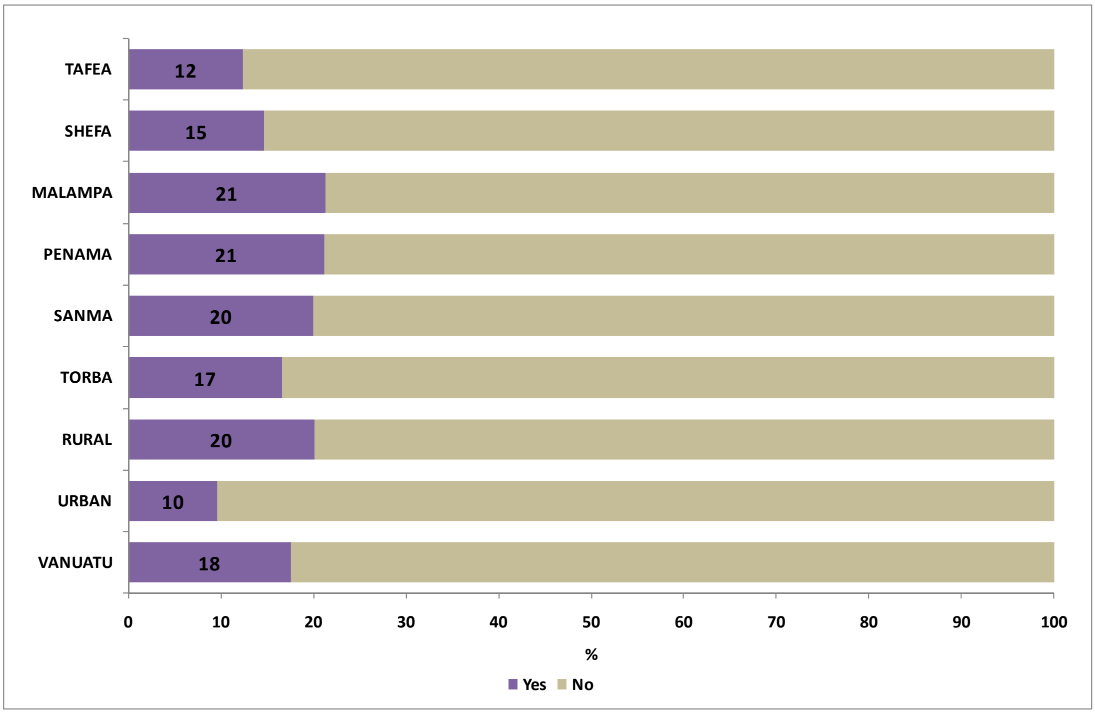
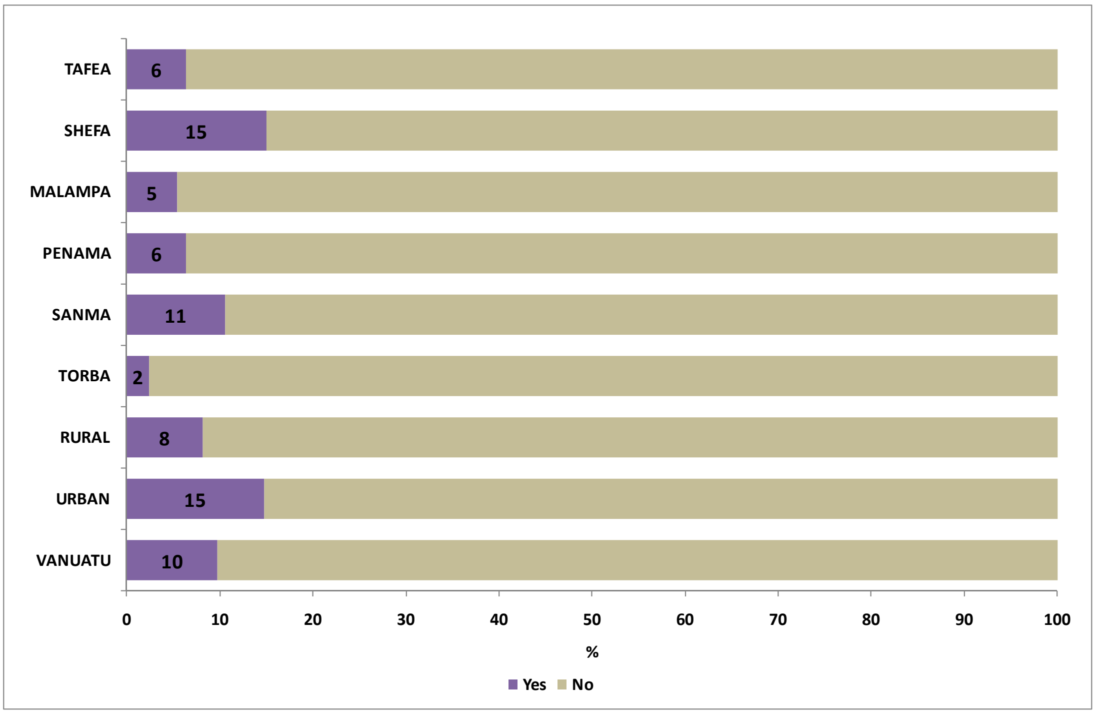


Figure 166: Proportion of private households by place of residence and availability of a mower (%), Vanuatu: 2009



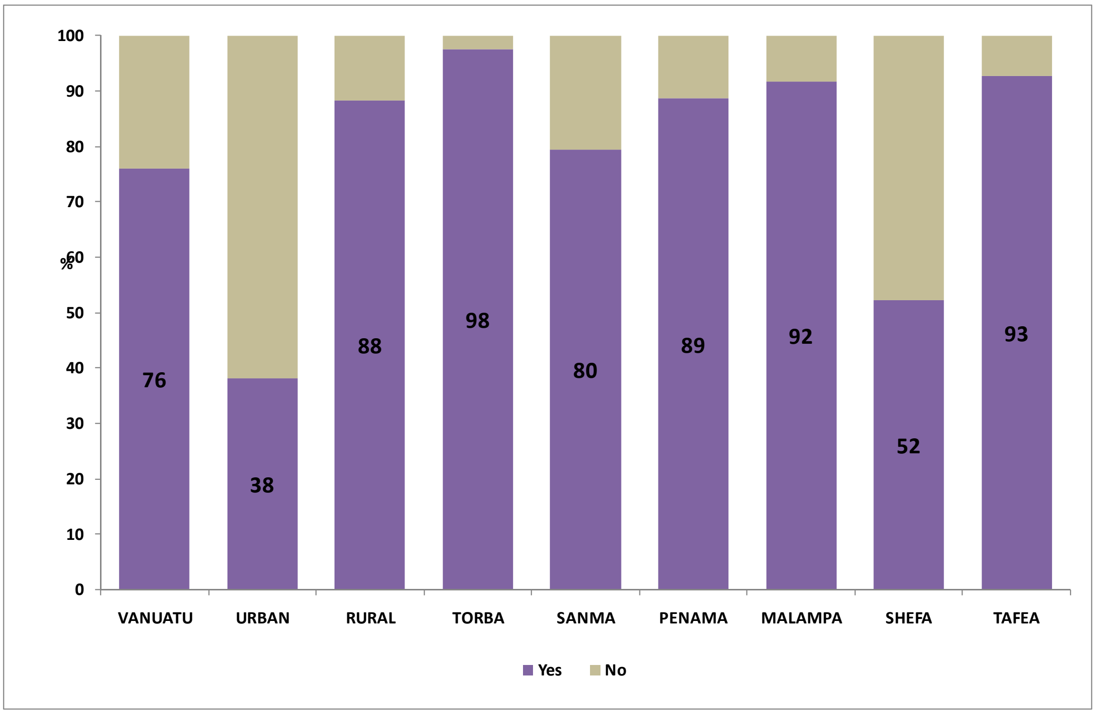
5.6 Household bednets

The majority of all households in Vanuatu had a bednet (76%) as shown in Figure 167. In total 130,789 bednets were counted in the 2009 census (Table 50). More households in the rural areas (88%) had bednets compared to households in the urban areas (38%).

Table 50: Number of private households by place of residence and availability of bednets, Vanuatu: 2009

Place of Residence	Households with/without bednets			Number of bednets
	Total	Yes	No	
VANUATU	**47,373**	**36,028**	**11,345**	**130,789**
URBAN	11,606	4,425	7,181	11,526
RURAL	35,767	31,603	4,164	119,263
TORBA	1,766	1,723	43	7,982
SANMA	9,213	7,329	1,884	25,932
PENAMA	6,620	5,870	750	22,622
MALAMPA	7,991	7,336	655	27,346
SHEFA	15,930	8,340	7,590	25,798
TAFEA	5,853	5,430	423	21,109

Fig. 167: Proportion of private households by place of residence and availability of bednets (%), Vanuatu: 2009



6. POPULATION PROJECTIONS

Timely and accurate information about population trends is in high demand for anyone making decisions in business, research, government and the community. Knowledge about the current size and structure of a country's population is needed for the formulation and implementation of policies and programmes in almost all areas of public life. As policies are aimed at resolving current issues through the achievement of goals in the future, knowledge about future population trends is required. Activities in areas as diverse as health, environment, poverty reduction, social progress, and economic growth rely on comprehensive and consistent demographic information.

The appropriate method to produce population trends is to prepare estimates and projections of population size and structure by age and sex.

The starting point for any projection is a reliable and current age–sex distribution of a population. Furthermore, information on recent levels and patterns of fertility, mortality, and migration is needed.

The cohort-component method was used to compute the population projections presented in this report. This procedure simulates population changes as a result of changes in the components of growth: fertility, mortality and migration. Based on past information and current levels, assumptions are made about future trends in these components of change. The assumed rates are applied to the age and sex structure of the population in a simulation that takes into account:

- the age at which people die is related to their sex and age;
- women have children; and
- some people change their place of residence.

The cohort-component method of projecting a population follows each cohort of people of the same age and sex throughout their lifetime, according to their exposure to fertility, mortality and migration[11].

The key to making meaningful projections lies in the choice of assumptions about future population developments. These assumptions concern possible future birth, death and migration rates.

6.1 National projections

Projection assumptions

As a general guideline, when preparing multiple assumptions about future levels of fertility, mortality and migration, it is advisable to arrive at outcomes that are symmetrical. This means

[11] 1994. Arriaga E.E. Population analysis with microcomputers, volume I, Presentation of techniques, p. 309–310. US Census Bureau, Department of Commerce, USA.

that the level of low and high, or fast and slow, growth assumptions should be equally positioned with respect to the medium level assumption (i.e. above and below).

The following demographic inputs were developed for the projections.

Projection period

The population projections cover the 45-year period of 2009–2054.

Base population

Projections are based on the 2009 Vanuatu census age and sex distribution, adjusted to mid-year 2009. The population is further adjusted for suspected under enumeration of the age groups 15-24 for males, and to a lesser degree for females.

Table 51 and Figures 168 and 167 show a comparison of the actual 2009 population count, and results of a population projection that used the 1999 population as a starting point (base population), and intercensal fertility and mortality estimates.

A comparison of the counted and projected population shows a very good fit in general, with the exceptions of the 15-24 year age groups. While these young people are often the age groups most likely affected by migration (people in search for further education and/or employment opportunities overseas), it seems unlikely that there were that many people who had left Vanuatu during the intercensal period. It was therefore decided to assume that these people must have been missed during the 2009 census count. In addition, the female population aged 30-44 was slightly adjusted for suspected under enumeration. In total the enumerated census population of 234,023 was adjusted by 7,000 to 241,023 people (Table 52).

Because the projections should refer to the mid-year of each year of the projection period, the base year population has further been adjusted to a new total of 239,000 for mid-year 2009 (the PAS procedure MOVEPOP has been used to estimate the mid-year population from the November census population) (Table 53).

Table 51: Comparison of the projected population with the enumerated population, Vanuatu 2009

Age group	2009 Census		2009 Projection		absolute difference		percentage difference	
	Male observed	Female observed	Male projected	Female projected	Males	Females	Males	Females
0-4	17,310	16,057	17,647	16,275	337	218	1.9	1.4
5-9	15,455	14,230	15,502	14,342	47	112	0.3	0.8
10-14	14,762	13,159	14,414	13,358	-348	199	-2.4	1.5
15-19	12,027	11,855	13,979	13,208	**1,952**	**1,353**	16.2	11.4
20-24	10,415	11,126	12,529	11,542	**2,114**	**416**	20.3	3.7
25-29	9,124	9,291	8,995	8,573	-129	-718	-1.4	-7.7
30-34	7,790	7,903	7,890	8,268	100	**365**	1.3	4.6
35-39	7,076	7,095	7,166	7,495	90	**400**	1.3	5.6
40-44	5,814	5,709	6,142	6,257	328	**548**	5.6	9.6
45-49	5,066	5,175	5,244	5,270	178	95	3.5	1.8
50-54	3,789	3,626	3,966	3,830	177	204	4.7	5.6
55-59	3,261	3,102	3,325	3,158	64	56	1.9	1.8
60-64	2,192	2,127	2,411	2,297	219	170	10.0	8.0
65-69	2,054	1,772	1,850	1,656	-204	-116	-10.0	-6.5
70-74	1,085	983	1,107	1,082	22	99	2.0	10.1
75+	1,871	1,722	1,326	1,195	-545	-527	-29.1	-30.6
Total	**119,091**	**114,932**	**123,492**	**117,807**	**4,401**	**2,875**	**3.7**	**2.5**

Figure 168: Comparison of the projected male population with the enumerated male population, Vanuatu 2009

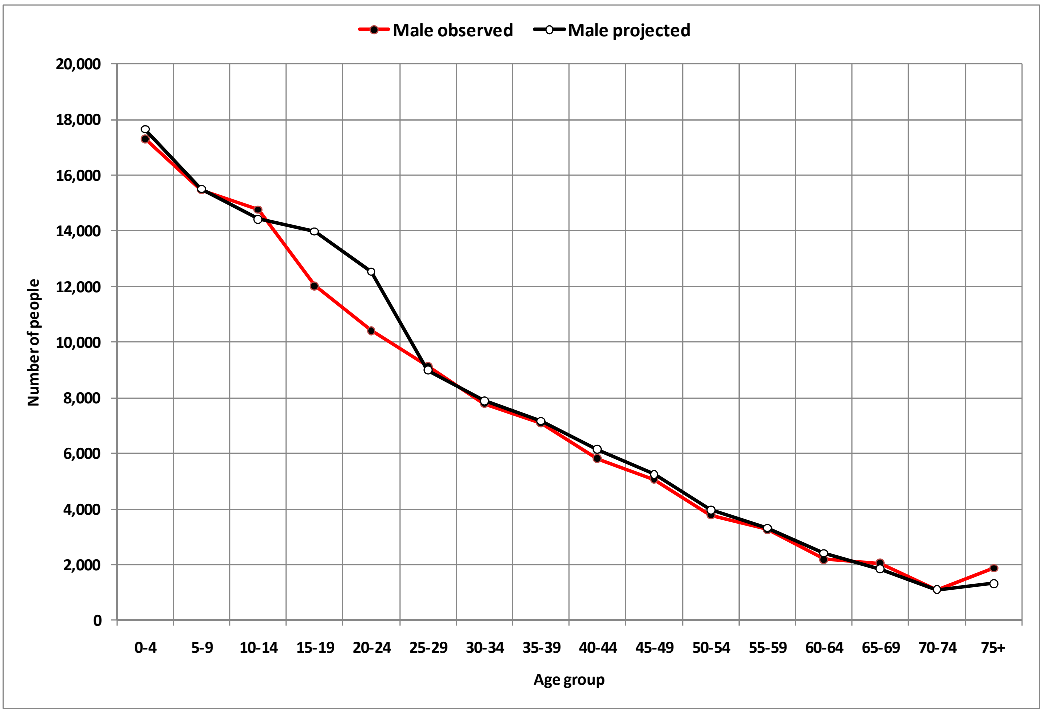


Figure 169: Comparison of the projected female population with the enumerated female population, Vanuatu 2009

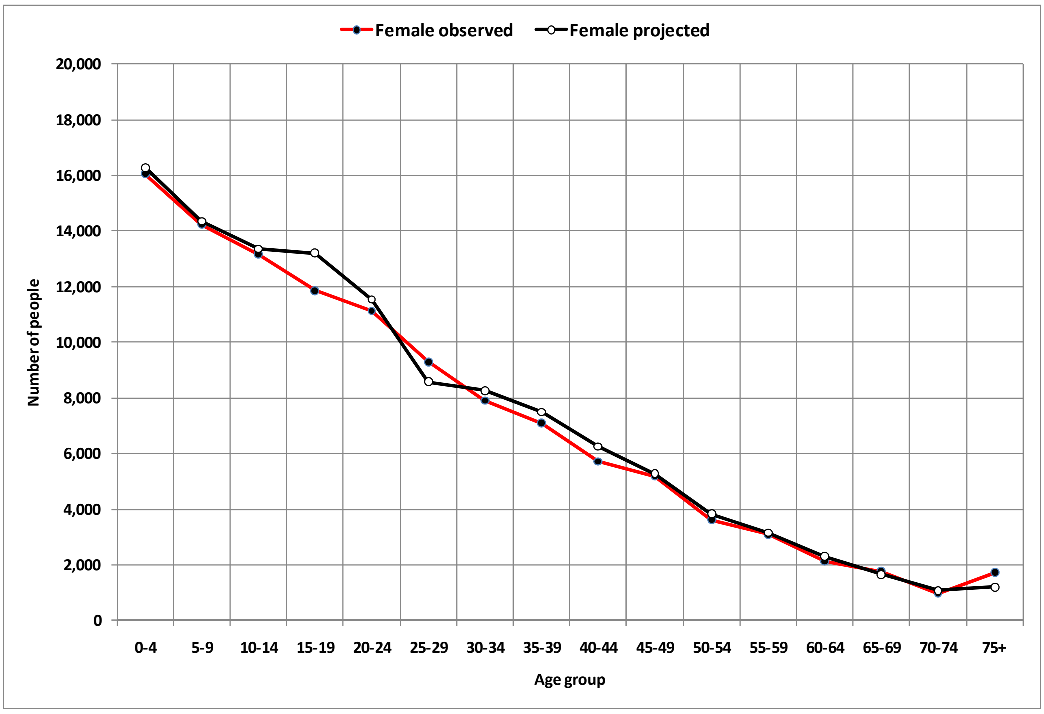


Table 52: Adjusted census population, Vanuatu: 16 November 2009

Age group	Males	Females	Total
0-4	17,310	16,057	33,367
5-9	15,455	14,230	29,685
10-14	14,762	13,159	27,921
15-19	13,977	13,205	27,182
20-24	12,515	11,526	24,041
25-29	9,124	9,291	18,415
30-34	7,790	8,203	15,993
35-39	7,076	7,495	14,571
40-44	5,814	6,209	12,023
45-49	5,066	5,175	10,241
50-54	3,789	3,626	7,415
55-59	3,261	3,102	6,363
60-64	2,192	2,127	4,319
65-69	2,054	1,772	3,826
70-74	1,085	983	2,068
75-79	941	799	1,740
80+	930	923	1,853
Total	**123,141**	**117,882**	**241,023**

Table 53: Base population for projections, Vanuatu: 1 July 2009

Age group	Males	Females	Total
0-4	17,150	15,937	33,087
5-9	15,311	14,124	29,435
10-14	14,626	13,060	27,686
15-19	13,847	13,106	26,953
20-24	12,399	11,440	23,839
25-29	9,039	9,222	18,261
30-34	7,719	8,141	15,860
35-39	7,010	7,439	14,449
40-44	5,760	6,163	11,923
45-49	5,019	5,137	10,156
50-54	3,754	3,598	7,352
55-59	3,231	3,079	6,309
60-64	2,172	2,112	4,284
65-69	2,035	1,758	3,793
70-74	1,076	976	2,052
75-79	931	793	1,724
80+	921	916	1,837
Total	**122,000**	**117,000**	**239,000**

Fertility

The estimated TFR of the period 2009 and associated ASFR, as described in Section 3.1 (Table 11), are used as a starting point, with four different assumptions made about future fertility developments (Fig.170).

The future TFR level of the medium fertility assumption is assumed to reach 2.0, which is the average level of TFR of populations in present-day Australia, France, New Zealand and the United States (App. 22). This level will be reached (by means of extrapolation) with a pace of fertility decline that is based on Vanuatu's past fertility trend. According to this pace, Vanuatu will reach a TFR of 2.0 in the year 2058, and will reach a level of 2.1 at the end of the projection period in 2054.

The reason for choosing the fertility level of countries such as Australia, France, New Zealand and the United States as the future level for Vanuatu is twofold:

1) These countries have completed the "demographic transition" (see explanatory note in App.24). Appendix 22 shows that the TFR of these four countries has remained at an almost constant level of 2.0 over the last 30 years (1975–2010).

2) They are regarded as the metropolitan focal points of Pacific Island countries.

Therefore the medium fertility assumption is set as follows.

Assumption 1 — Medium Fertility: Fertility decreases to 2.1 in the year 2054 (as described above).

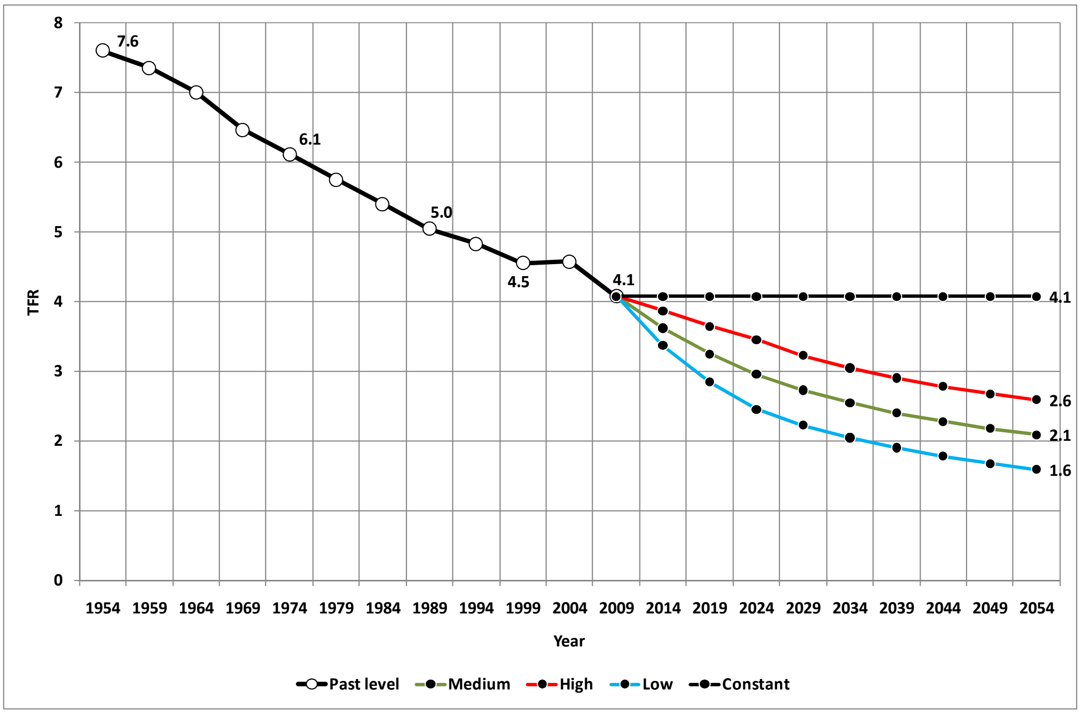
The high and low fertility assumptions were built symmetrically around the medium fertility assumption.

Assumption 2 — High Fertility: The high fertility assumption assumes a TFR of 0.5 higher than the medium fertility level. Therefore, the level of TFR in 2054 is 2.6.

Assumption 3 — Low Fertility: The low fertility assumption assumes a TFR of 0.5 lower than the medium fertility level. Therefore, the level of TFR in 2054 is 1.6.

Assumption 4 — Constant Fertility: This is a purely academic assumption, with the purpose to demonstrate what would happen to Vanuatu in terms of population size if the current TFR of 4.1 remains constant at this level for the entire projection period.

Figure 170: Estimated past levels of fertility, and future fertility assumptions for projections, Vanuatu: 1954–2054



Mortality

It is thought that under normal circumstances (meaning in the absence of catastrophes such as wars, epidemics and major natural disasters), the Vanuatu' health situation and mortality levels will continuously improve throughout the projection period.

The estimated life expectancies at birth [E(0)] — 69.6 years and 72.7 years for males and females, respectively — are used as the starting point for projections in 2009. These estimates are based on the estimates as outlined in section 3.2.

Assumption: The population projections presented here assumes a rising trend in life expectancy for males and females according to the UN working models of mortality improvement, as described in "World Population Prospects, p. 144[12] (App.23). According to this model, current estimated life expectancies gradually increase and reach 77.3 and 81.4 years in 2054 for males and females, respectively (Fig.171).

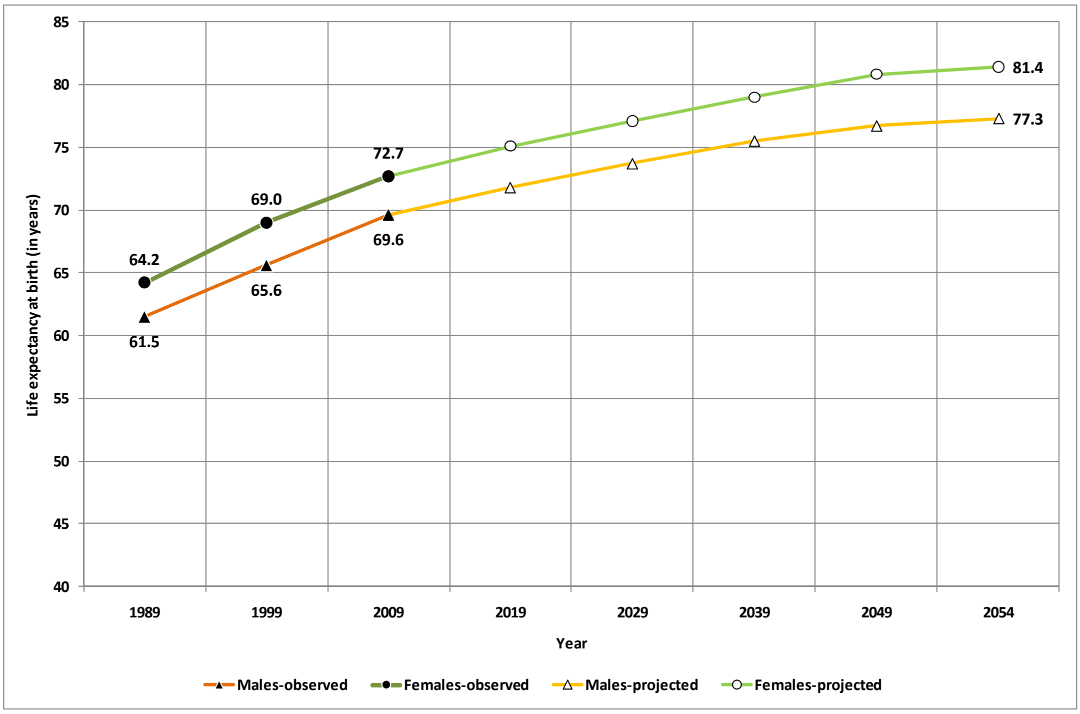
Only one assumption regarding mortality is made. The reason for this is that variations in mortality levels (multiple assumptions) usually have only a minor impact on final projection

[12] 1995. United Nations. World Population Prospects. NewYork: United Nations. 886 p.

results; they also would require the production of too many different scenarios that ultimately would only complicate the presentation of results.

The derived mortality pattern (age-specific death rates) was compared with the different Coale-Demeny and United Nations model life tables using MORTPAK4.1, procedure COMPAR. The assumption was made that possible under-registration of deaths is not age specific and therefore does not affect the overall pattern of mortality. It was found that the Coale-Demeny West model pattern resembles most closely the empirical mortality pattern of Vanuatu.

Figure 171: Estimated past levels of mortality, and future mortality assumptions for projections, Vanuatu: 1989–2054



Migration

Making meaningful assumptions about future migration developments provides the single greatest difficulty for undertaking population projections, because many of the social and economic parameters shaping migration patterns depend largely on countries' overall social, economic and political developments, as well as environmental factors (e.g. possible sea level rise, frequency and strength of cyclones). All of these factors fluctuate widely and are hard to predict. Migration projections also depend on economic and political developments overseas.

Apart from these global considerations, making assumptions about migration is difficult because reliable information on international arrivals and departures, and especially vital statistics such as annual number of births and deaths is not available.

However, at present the Vanuatu population is not known for migrating permanently overseas at any significant measure, while Vanuatu itself is not an immigration country either. Furthermore, an analysis of the fertility and mortality level reveals that the last intercensal population growth rate (taking under enumeration of the 2009 census into account as described above) closely resembles the current natural growth rate, which implies that there is very little international migration (see section 3.3.2).

In view of the absence of significant past international migration, it is decided to assume zero net migration for the entire projection period as it is impossible to predict what the level of migration would be should it occur in future. Of course the projections needs to be amended should this situation change.

Projection results

The four different fertility assumptions results in four different projections (Table 54 and Fig.172). These different projections highlight the impact of different levels of fertility on the population size and structure of Vanuatu: The higher the fertility level assumed, the higher the population outcome.

Table 54: Population size according to 4 projection variants, Vanuatu: 2010–2050

Fertility assumption	Year 2010	2015	2020	2025	2030	2035	2040	2045	2050
Constant	245,376	280,245	319,467	362,340	409,251	461,367	519,923	585,596	658,948
High	245,376	279,022	314,579	351,060	387,908	425,211	463,510	502,652	541,896
Medium	**245,376**	**277,503**	**309,299**	**340,221**	**370,392**	**400,033**	**429,157**	**457,130**	**483,048**
Low	245,376	275,995	304,025	329,363	352,879	375,025	395,452	413,275	427,621

The four population projection scenarios are described in detail below:

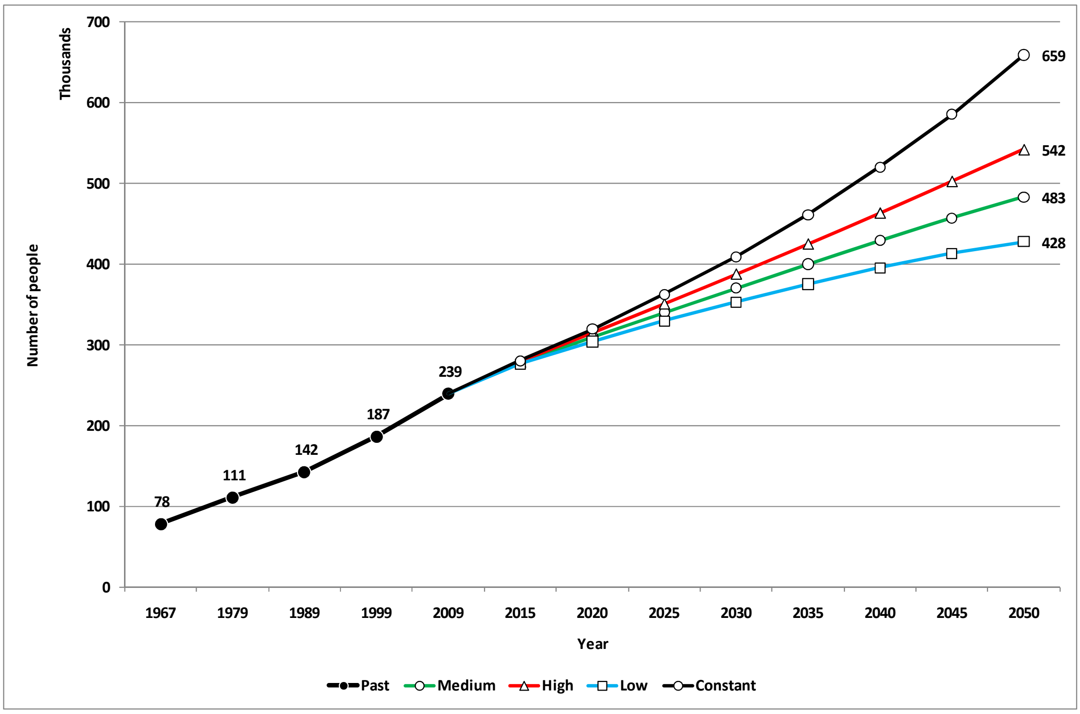
1) **High population scenario.** This projection outcome is determined by applying the high fertility assumption (constant fertility). This scenario results in a population size of 388 thousand in the year 2030, and 542 thousand in the year 2050.

2) **Medium population scenario.** This projection outcome is determined by applying the medium fertility assumption (moderate fertility decline). This scenario results in a population size of 370 thousand in the year 2030, and 483 thousand in 2050.

3) **Low population scenario.** This projection outcome is determined by applying the low fertility assumption (fast fertility decline). This scenario results in a population size of 353 thousand in the year 2030, and only 428 thousand in the year 2050.

4) **Constant population scenario.** This projection outcome is determined by assuming that the current high level of fertility remains constant during the entire projection period. This scenario results in a population size of 409 thousand in the year 2030, and 659 thousand in the year 2050.

Figure 172: Past and future population trends according to 4 projection variants, Vanuatu: 1967–2050



In general it becomes clear that the population will increase substantially regardless of which projection scenario is used.

It can be seen that the impact of the different projections on the population size until the year 2020 are relatively minor. Significant population differences based on the different projection assumptions can only be expected thereafter.

Figures 173 to 176 provide the comparative results of the various projections, and highlight the differential impact on population size, growth and structure.

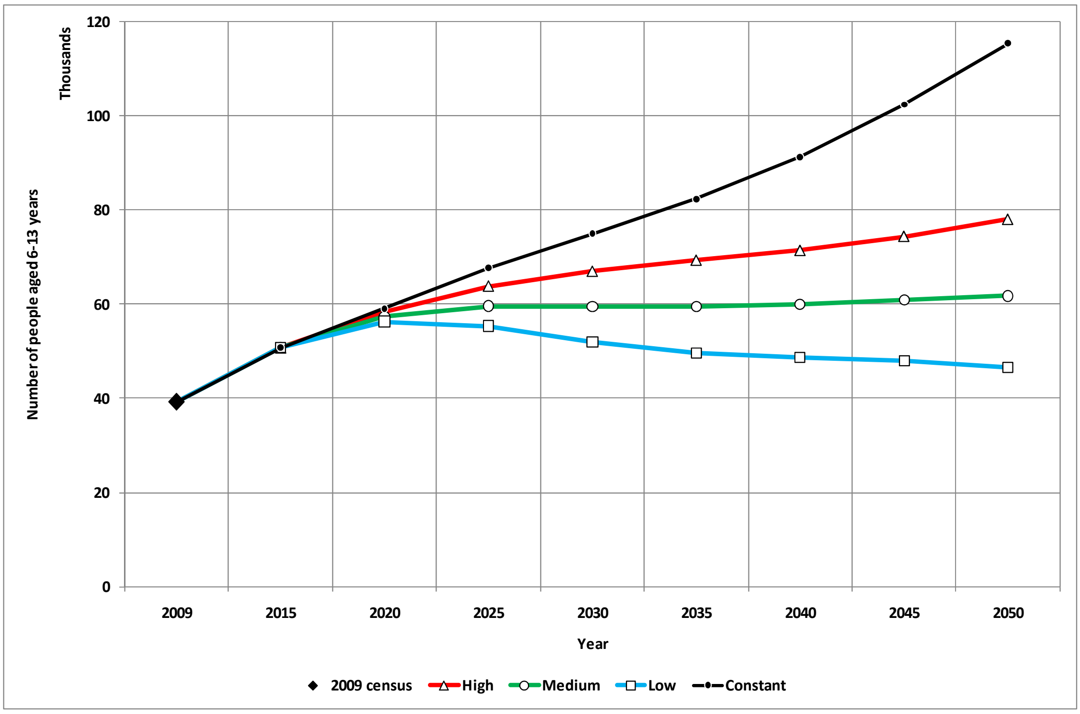
The population aged 6–13 — the mandatory school age population — can be expected to increase from its current size of 39 thousand until the year 2020 regardless of the projection scenario used (Fig.173) and will then be almost 60 thousand people; only according to the low population scenario is the school age population expected to decrease after 2020, but it will stay higher than in 2009. All other projection scenarios will result in a significant higher school age population than in 2009.

According to the constant population scenario, assuming constant fertility at its present high level, the school age population would more than double until 2050.

However, according to the medium scenario, the school age population aged 6–13 would increase to about 60,000 people in 2025 and stabilize at that level thereafter.

The general impact on the future population structure by broad age groups can be seen in Table 55 and Figures 174 to 176.

Figure 173: Population aged 6–13 (mandatory school age) according to high, medium, low and constant population projection scenarios, Vanuatu: 2009-2050



Regardless of the projection scenario used, the size of the working age population (aged 15–59) will be much larger than in 2009 (129 thousand), and will be 159 thousand in 2015, and will further increase to more than 200 thousand people in 2030. According to the medium variant scenario, the working age population will reach 300 thousand in the year 2050.

Another general outcome is that the population aged 60 and older will be significantly larger than 14 thousand in 2009, regardless of the projection scenario used. The 'elderly' population will be 17 thousand in 2015, 32 thousand in 2030, and 68 thousand in 2050. Therefore the population will grow older regardless of which projection is used, as is expressed in the median age, which will increase from 20.7 years in 2009 to 25 in 2030 and 32 in 2050 according to the medium projection variant.

The proportion of the young population aged 0–14 (as part of the total population) will decrease regardless of the type of projection scenario used (Table 55). However, its size will increase at least until 2030, and only under the low projection scenario would the population aged 0-14 decrease thereafter.

The size of the population younger than 15 years is likely to increase from about 91 thousand in 2009 to about 112 thousand in 2030 (according to the medium population scenarios), and would be 115 thousand in 2050. On the other hand the young population will be much higher than that if fertility levels remain high and there could be almost 150 thousand people aged 0-14 years in 2050.

The three different projection scenarios will produce very different population growth rates: the high population scenario will result in an annual population growth rate of 2.4%, while the medium population scenario will only produce 1.5% annual growth in 2030, and only 1% in 2050.

Finally, the different projections result in very different age-dependency ratios: the lower the level of future fertility, the lower the age-dependency ratio.

Table 55: Population structure and indicators according to three different projection scenarios, Vanuatu: 2010, 2030 and 2050

Indicator	2010	Constant		High		Medium		Low	
		2030	2050	2030	2050	2030	2050	2030	2050
Population by broad age groups (%)									
0 - 14 years	38	36	35	33	28	30	24	27	20
15 - 59 years	57	56	55	59	60	61	62	64	64
60 years and older	6	8	10	8	13	9	14	9	16
Dependency ratio	76	78	83	70	67	63	61	57	55
Median age	20.7	22.5	23.6	24.1	28.8	25.4	31.9	26.9	35.5
Average annual growth rate (%)	2.6	2.4	2.4	1.9	1.5	1.6	1.0	1.3	0.6

Figure 174: 2015 population projections by broad age groups according to four scenarios

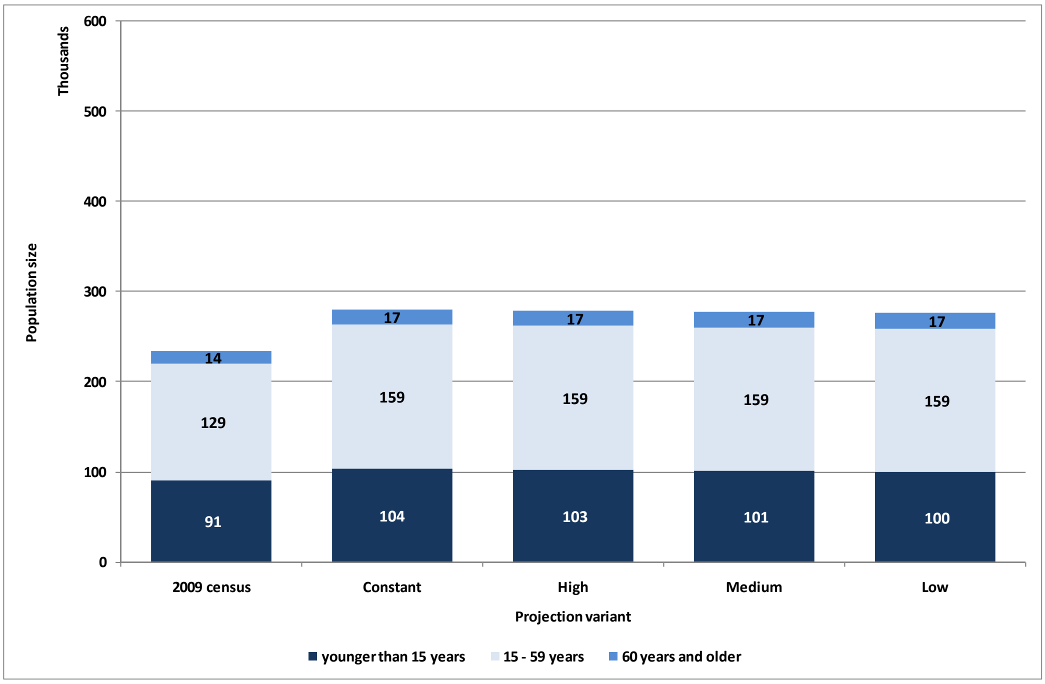


Figure 175: 2030 population projections by broad age groups according to four scenarios

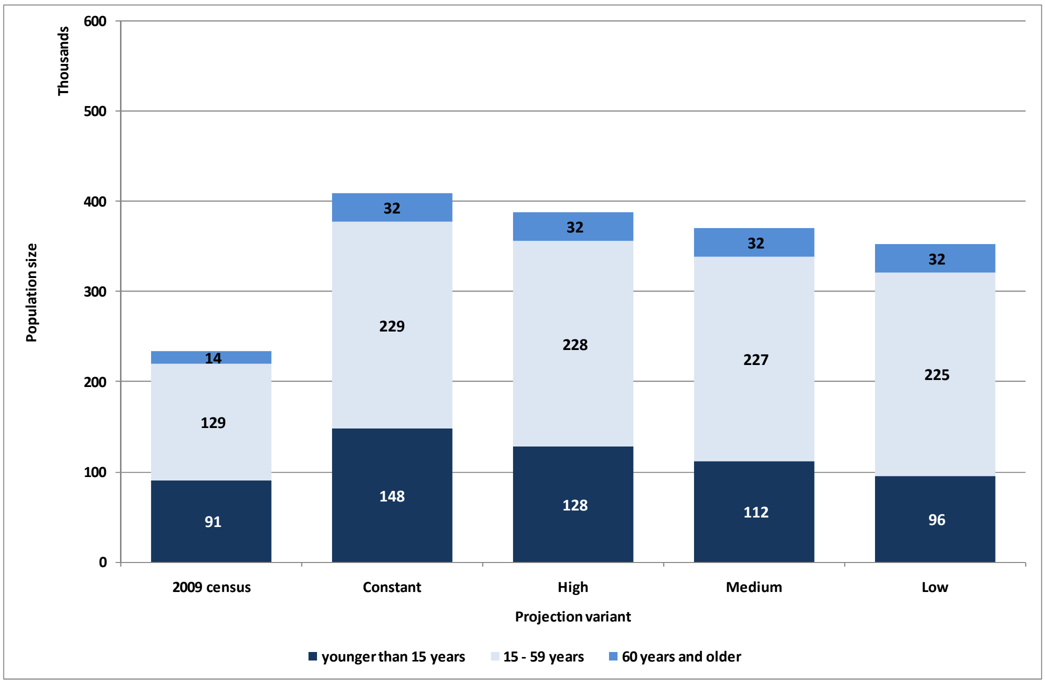
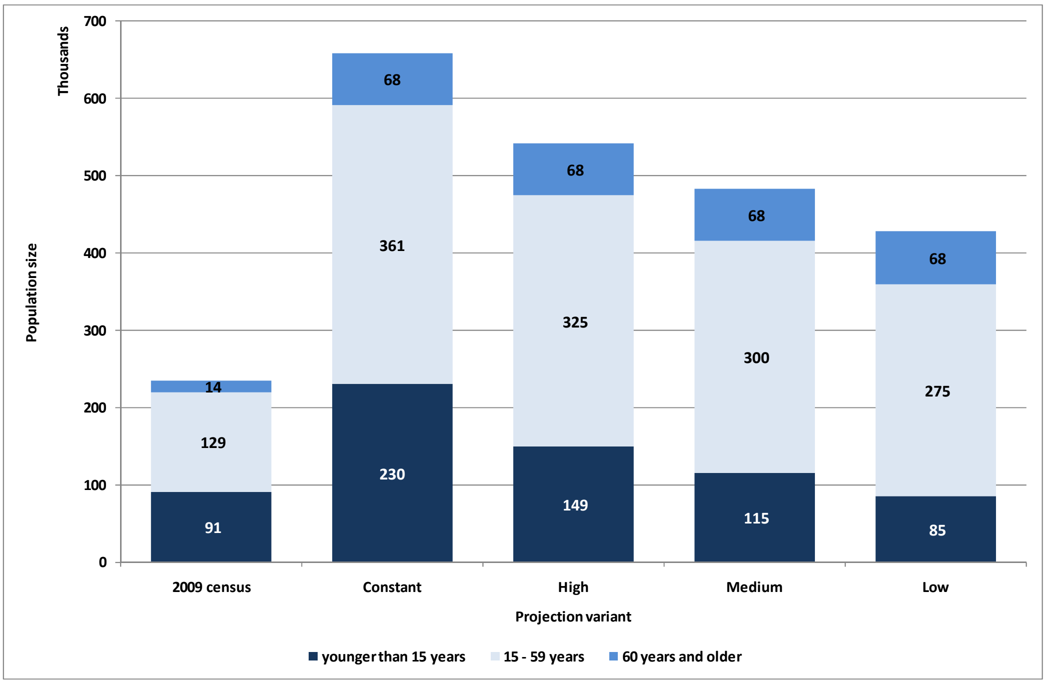


Figure 176: 2050 population projections by broad age groups according to four scenarios



The different impacts on the population size and structure are furthermore illustrated as population pyramids (Figs. 177 to 180). The shaded area represents the enumerated 2009 population size by sex and age group, and the outlined area represents the estimated (projected) population size in 2050, according to the high (Fig.178), medium (Fig.179), and low (Fig.180) population scenarios.

In addition, Figure 177 illustrates the impact of constant high level fertility. It shows what the population would look like if the current level of 4 children per woman remains at this level for the entire projection period 2009–2050. As is shown in Figure 172, the population would then be 659 thousand people.

The different shaped pyramids of the four different projection scenarios (constant, high, medium, and low) clearly illustrate that the difference in population size and structure in 2050 is the size of the population aged 0–34. It highlights the effect of the assumed fertility level on future population size and structure: the lower the assumption of the future fertility level, the smaller the size of the population younger than 35 years of age in the future.

Figure 177: Population pyramid, constant fertility projection, Vanuatu: 2010 and 2050

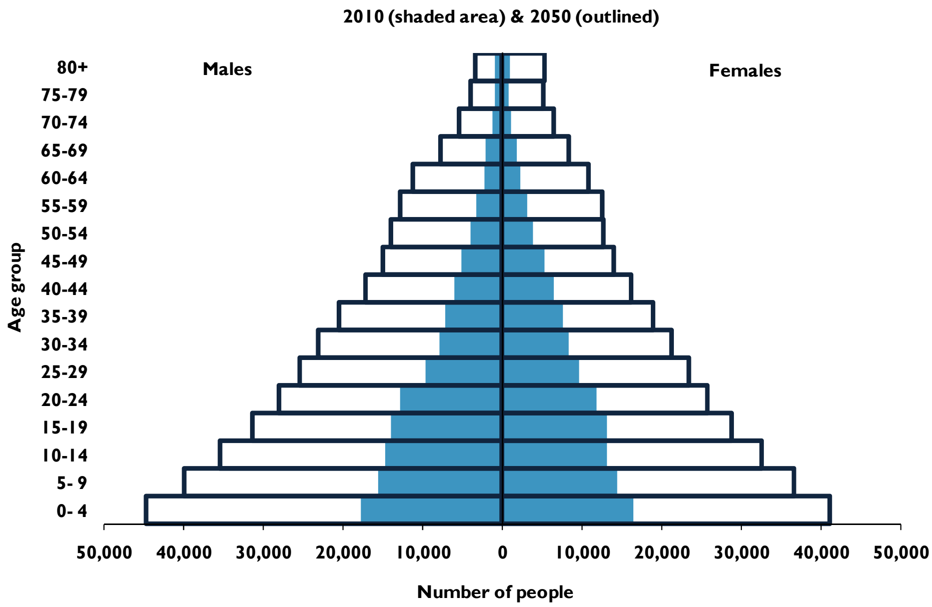


Figure 178: Population pyramid, high fertility projection, Vanuatu: 2010 and 2050

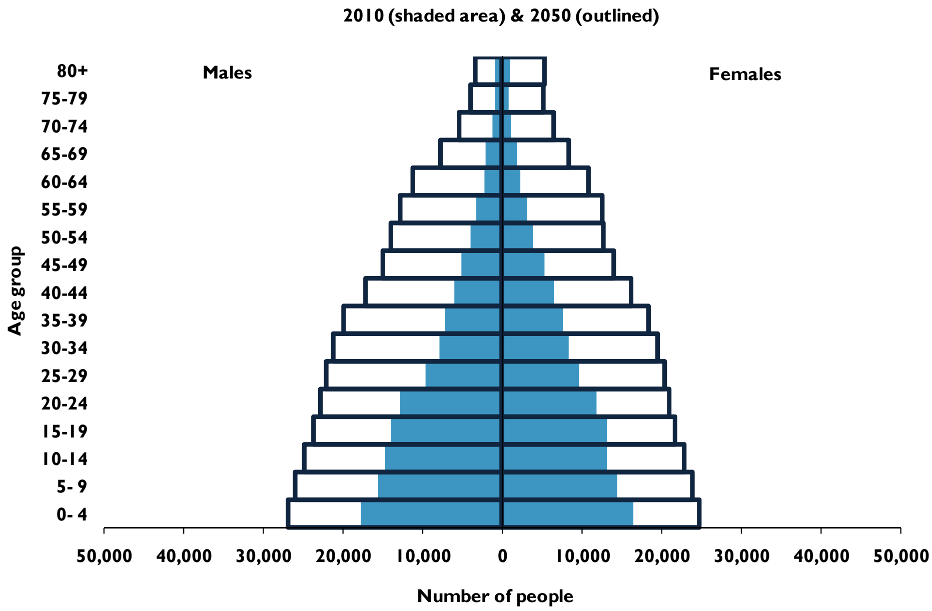


Figure 179: Population pyramid, medium fertility projection, Vanuatu: 2010 and 2050

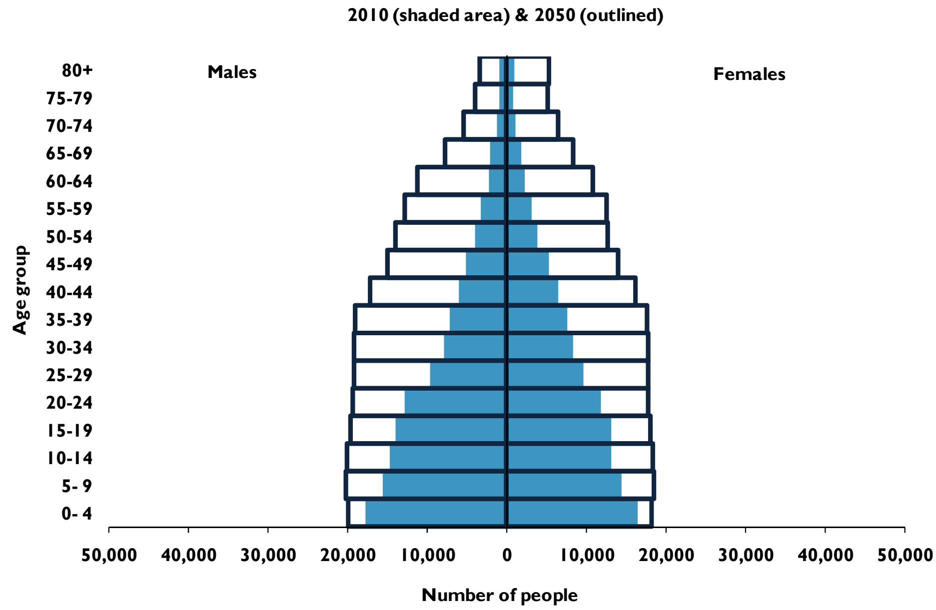
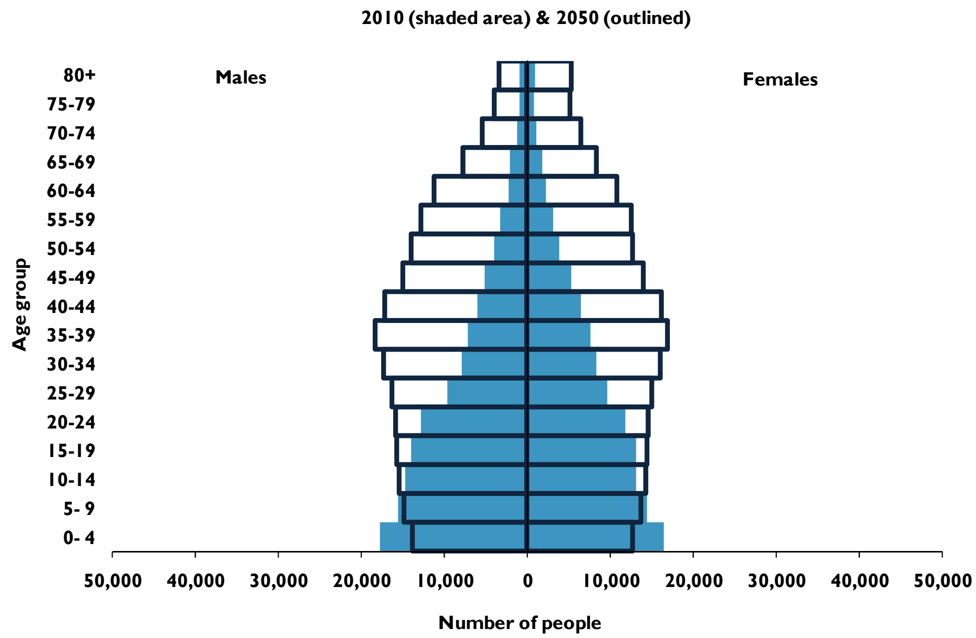


Figure 180: Population pyramid, low fertility projection, Vanuatu: 2010 and 2050



Most likely outcome

Predicting the likelihood of a certain future population size and structure is difficult for any country, and the further into the future the prediction, the more uncertain the outcome.

Therefore, several projection variants need to be produced to allow users to choose from an outcome that seems most probable according to their own views and opinions. Most data users, however, prefer to use a recommended projection scenario that depicts a "most likely outcome". Such a variant is usually called the “medium” projection scenario using the medium assumptions used.

Population changes close to those presented in the medium population scenario appears to be the most likely outcome because:

- The current fertility level is expected to decline as it has in Vanuatu’s recent past, and is furthermore expected to do so based on historical worldwide observations of countries with a similar level of fertility (see also the “theory of demographic transition”, App.24). Therefore, the high fertility assumption, with its very slow fertility decline, seems to be a more unlikely outcome, and a constant high level of the current TFR of 4.1 is surely an unrealistic scenario.

- Regarding the low fertility assumption, fertility levels (TFR) have already declined to well below 2 in many parts of the world, and it is therefore a realistic assumption to make. Nevertheless, such rapid fertility decline does not seem likely to occur in Vanuatu as it seems “uncharacteristic” for Pacific Islands populations at the moment.

6.2 Sub-national projections

Population projections for each of Vanuatu’s six provinces were prepared according to the same principles as the national projection. The cohort-component method was applied, and the fertility and mortality indicators as estimated from the 2009 census were used as inputs for each province.

However, there is one significant difference in the preparation of sub-national projections compared to the national projection, and that is the assumptions of (internal) migration. While no migration assumption was made for the national projections (net international migration is zero), a migration assumption for the provinces had to be included as the demographic pattern of each province is strongly influenced by internal migration.

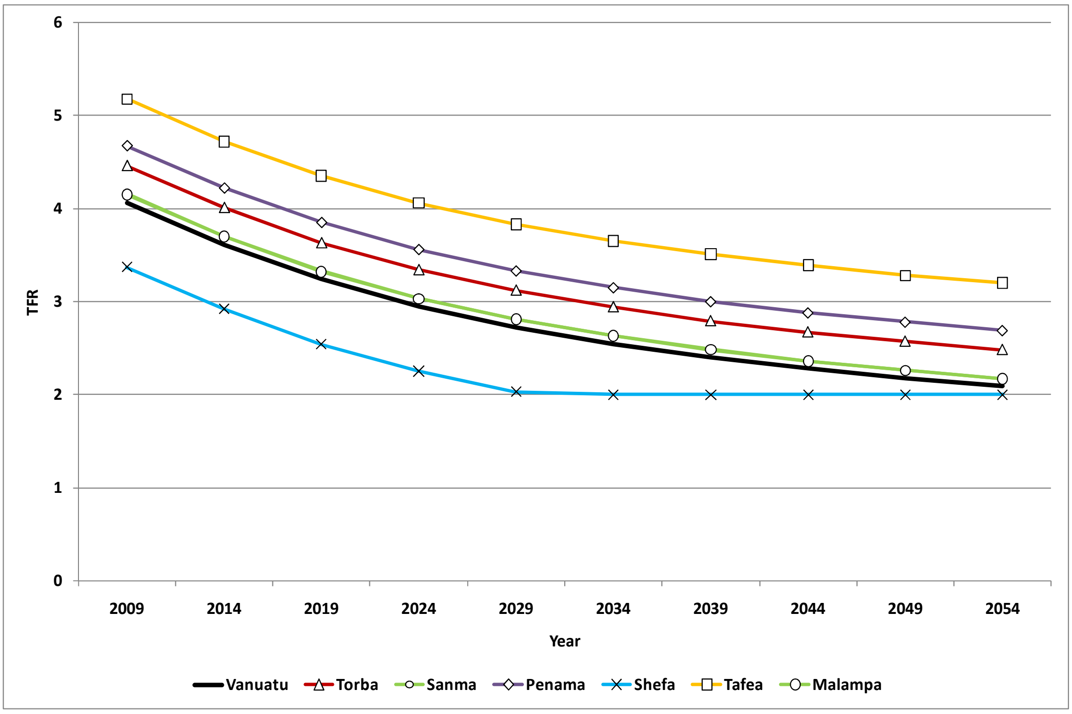
Base population

The census age distributions of each province as recorded in the census are used and prorated to be consistent with the adjusted base population for the national projections (App.25 and Tables 52 to 53).

Fertility

The trend of fertility of each province throughout the projection period follows the same pattern as that established for the national projection (medium variant). However, the level of fertility is determined by the estimated level for 2009 (Fig.181). The higher the level in 2009, the higher the level throughout the projection period, because the target level of a TFR of 2 will be reached later in time. According to this fertility schedule, Shefa would reach a TFR of 2 already in 2029 (because it starts with a much lower level in 2009), and will stay at this level throughout the remainder of the projection period.

Figure 181: Fertility trend by province, Vanuatu: 2009-2054



Note: The line showing the fertility level and trend of Sanma and Malampa overlap as their TFR in 2009 was with 4.2 the same

Mortality

The level of future mortality (life expectancy at birth) of each province is determined by using the UN working models of mortality improvement as described earlier (App.23), applied to the estimated life expectancy at birth of each province as described in section 3.2.2.

Migration

In order to estimate the migration component of each province, the balancing equation was used.

Balancing equation:

Population growth = **Births** minus **Deaths** plus **Migration**

Net migration can be estimated as

Migration = **Population growth** minus **Births** plus **Deaths**

Since the population growth rate and the level of fertility and mortality are known from the census, the migration component can be calculated. The following levels of fertility, mortality and migration were used as a starting point for each province (Table 56). Please note that for Sanma zero net migration is assumed, as its current growth rate is about the same as the estimated natural growth rate, and its demographic dynamic is very similar to the national average of Vanuatu.

With respect to migration, two variants of migration have been prepared.

1. **Constant migration**: The estimated level in 2009 has been kept constant throughout the projection period
2. **Zero net migration**: Zero net migration is assumed for the entire projection period (only natural growth influences population growth).

The zero migration variant has been prepared in order to illustrate the impact of migration on the population size of the different provinces.

With regard to the age and sex structure of migrants, it is assumed that there will be equal numbers of males and females, and the age structure resembles that of a family type migration pattern (App.26).

Table 56 summarizes the different population components used for the provincial projections.

Table 56: Demographic components for provincial projections

Deomographic component	Torba	Sanma	Penama	Malampa	Shefa	Tafea	Vanuatu
Annual growth rate (%)*	1.9	2.4	1.5	1.2	3.7	1.1	2.3
TFR	4.5	4.2	4.7	4.2	3.4	5.2	4.1
E(0) - 2009							
Males	67.2	69.8	66.2	69.2	70.4	69.1	69.6
Females	71.2	72.4	71.7	72.6	73.4	72.1	72.7
E(0) - 2054							
Males	76.3	77.5	75.6	77.0	77.6	76.9	77.3
Females	80.8	81.4	81.2	81.3	81.7	81.4	81.4
Net migration (annual)	-60	0	-260	-400	1,370	-650	0

*not adjusted for under enumeration

Projection results

Figures 182 to 189 and Table 57 illustrate the impact of migration on the size of the different provinces.

Table 57: Population size by province according to different migration variants, Vanuatu: 2009-2050

Migration variant/ Year	Vanuatu*	Torba	Sanma	Penama	Malampa	Shefa	Tafea
2009	239,000	9,545	46,839	31,395	37,395	80,754	33,073
Constant migration							
2010	245,376	9,752	48,163	31,912	37,881	84,207	33,461
2015	277,503	10,792	54,975	34,521	40,120	102,143	34,952
2020	309,299	11,843	61,865	37,236	42,114	120,235	36,004
2025	340,221	12,910	68,657	40,100	43,926	137,607	37,021
2030	370,392	14,006	75,331	43,152	45,654	153,934	38,315
2035	400,033	15,103	81,816	46,246	47,199	169,836	39,833
2040	429,157	16,163	88,094	49,237	48,427	185,973	41,262
2045	457,130	17,168	94,086	52,084	49,267	202,196	42,329
2050	483,048	18,098	99,639	54,779	49,687	217,831	43,014
Zero migration							
2010	245,376	9,813	48,160	32,179	38,291	82,801	34,132
2015	277,503	11,194	54,886	36,302	42,831	92,723	39,566
2020	309,299	12,624	61,570	40,763	47,439	101,527	45,375
2025	340,221	14,088	68,055	45,497	52,032	108,871	51,679
2030	370,392	15,586	74,336	50,465	56,610	114,849	58,545
2035	400,033	17,089	80,366	55,504	61,041	120,189	65,845
2040	429,157	18,558	86,116	60,490	65,197	125,414	73,382
2045	457,130	19,972	91,469	65,403	69,015	130,215	81,056
2050	483,048	21,308	96,256	70,219	72,435	133,964	88,866

*The provincial projections are prepared to match the national medium fertility projection

In general, all provinces will increase in size until 2050 regardless of which type of migration assumption was applied, although the rate of increase varies considerably depending on the type of migration assumption used.

The size of Shefa will increase substantially to 218 thousand people until the year 2050 if the current high level of rural-urban migration continues. In comparison the other provinces remain relatively small in size, although each province will continue to increase. About 45% of the Vanuatu population would live in Shefa in 2050 compared to one third in 2009. The estimated demographic components of births, deaths, and migration, and population size and growth by province for the years 2011, 2015, and 2020 are shown in Table 58.

If suddenly there would be no further internal migration, and each province would be closed to migration, Shefa's population would only be 134 thousand people in 2050, and the other provinces would increase sharply in size. Only 28% of Vanuatu's population would live in Shefa.

Most likely outcome

Clearly Vanuatu's provinces are not and will not be closed to migration, and internal migration (rural-urban) will continue. In view of the currently relative small urban proportion of Vanuatu, it can be expected to grow substantially in future, as has been the case in most other countries in the world. Therefore the projection results using the constant migration assumption is the more realistic outcome.

Table 58: Projected demographic components of births, deaths and migration, and population size and growth by province, Vanuatu: 2011, 2015, and 2020

Indicator	2011						
	Torba	Sanma	Penama	Malampa	Shefa	Tafea	Vanuatu
Births	328	1,570	1,008	1,113	2,526	1,172	7,719
Deaths	61	229	234	246	370	172	1,311
Migrants	-60	0	-260	-400	1,370	-650	0
Growth	207	1,341	515	467	3,527	351	6,407
Population	9,959	49,503	32,430	38,354	87,721	33,816	**251,784**
Growth rate	2.1	2.7	1.6	1.2	4.0	1.0	2.5
Indicator	**2015**						
	Torba	**Sanma**	**Penama**	**Malampa**	**Shefa**	**Tafea**	**Vanuatu**
Births	327	1,622	1,006	1,053	2,705	1,055	7,768
Deaths	60	243	225	240	415	170	1,353
Migrants	-60	0	-260	-400	1,370	-650	0
Growth	208	1,378	521	414	3,660	235	6,416
Population	10,792	54,975	34,521	40,120	102,143	34,952	**277,503**
Growth rate	1.9	2.5	1.5	1.0	3.6	0.7	2.3
Indicator	**2020**						
	Torba	**Sanma**	**Penama**	**Malampa**	**Shefa**	**Tafea**	**Vanuatu**
Births	330	1,636	1,028	1,006	2,711	1,002	7,713
Deaths	60	264	221	238	479	170	1,432
Migrants	-60	0	-260	-400	1,370	-650	0
Growth	210	1,372	547	368	3,602	182	6,281
Population	11,843	61,865	37,236	42,114	120,235	36,004	**309,299**
Growth rate	1.8	2.2	1.5	0.9	3.0	0.5	2.0

Figure 182: Population size by province according to the constant migration variant, Vanuatu: 2010-2050

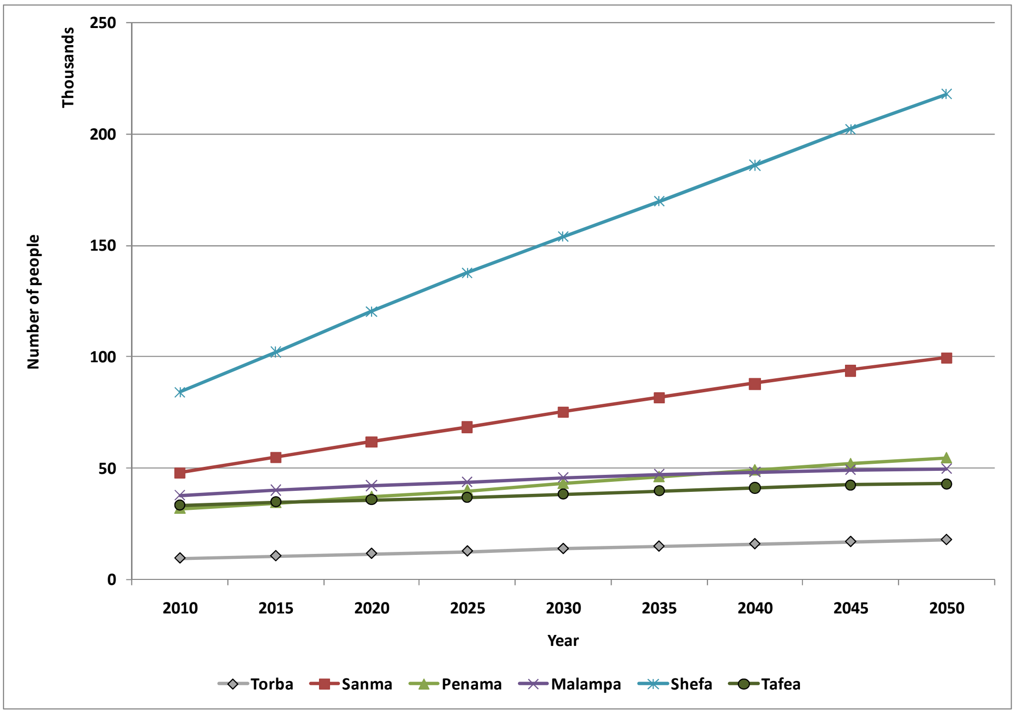


Figure 183: Population size by province according to the zero migration variant, Vanuatu: 2010-2050

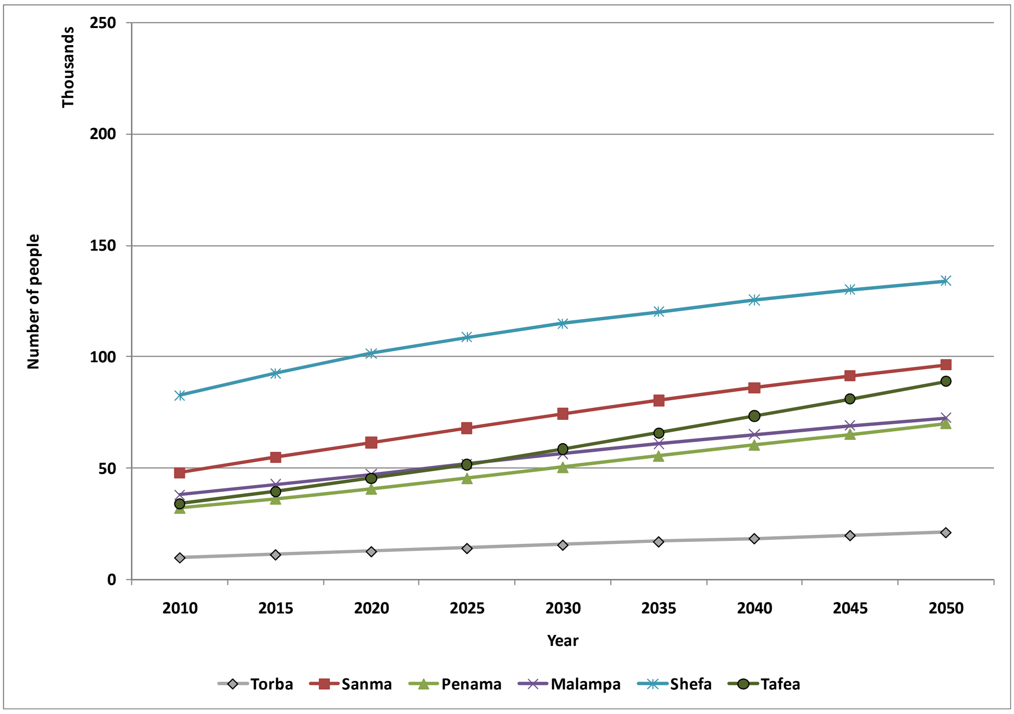


Figure 184: Population size according to two different migration variants, Torba: 2010-2050

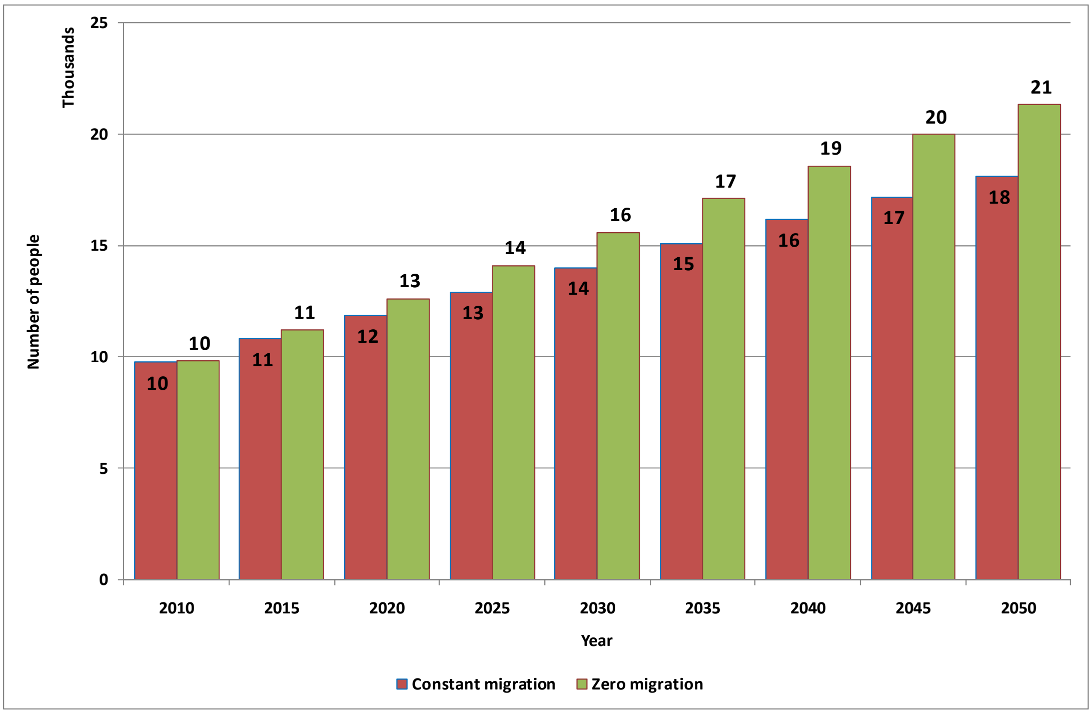
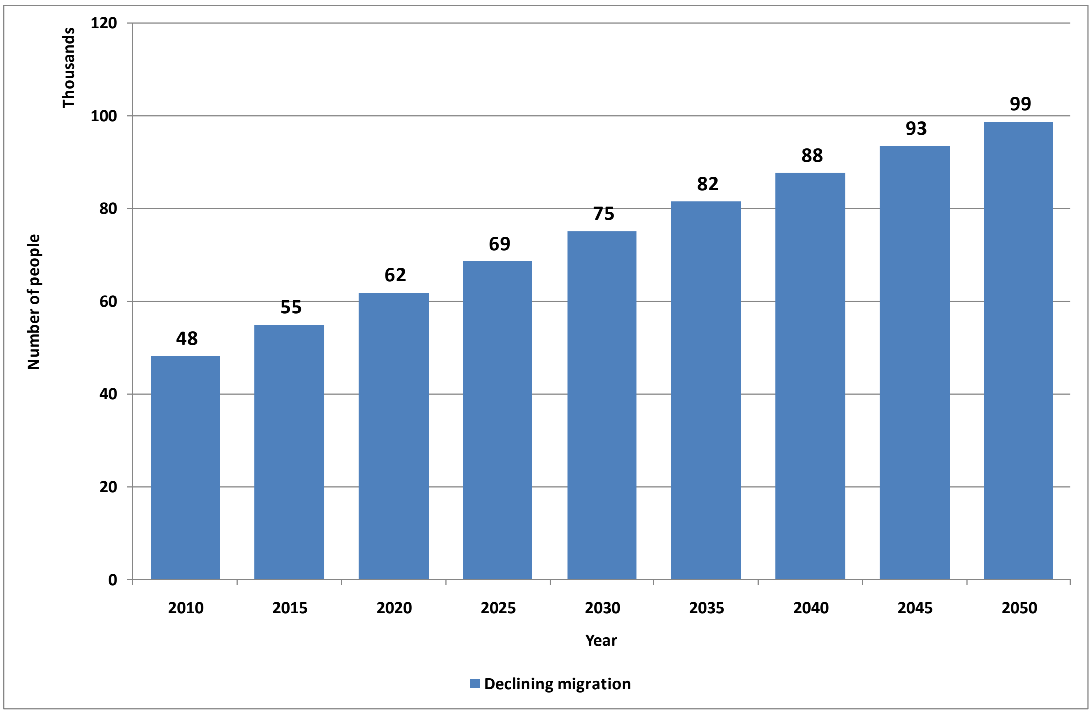


Figure 185: Population size, Sanma: 2010-2050



Note: for Sanma only one projection variant has been prepared with zero net migration

Figure 186: Population size according to two different migration variants, Penama: 2010-2050

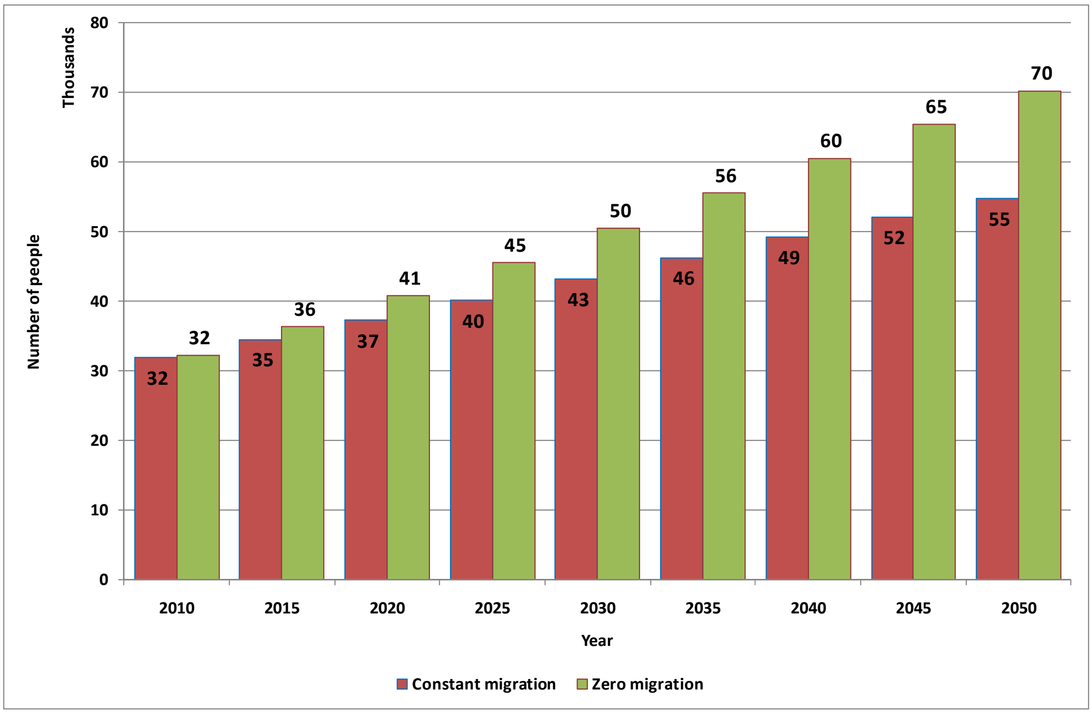


Figure 187: Population size according to two different migration variants, Malampa: 2010-2050

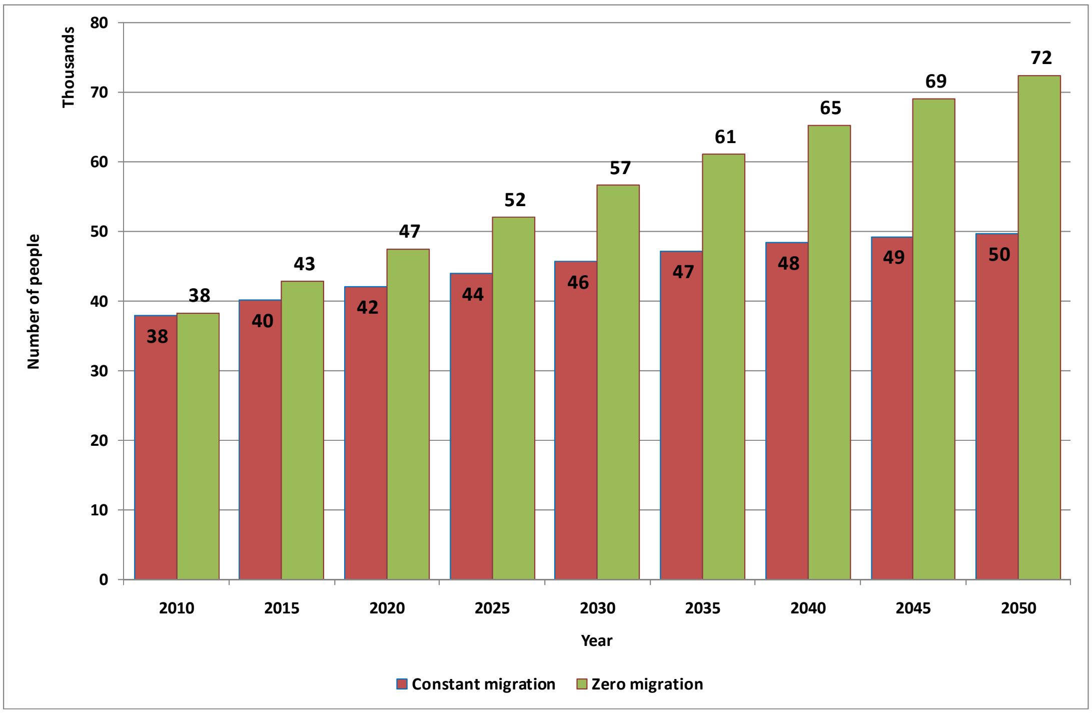


Figure 188: Population size according to two different migration variants, Shefa: 2010-2050

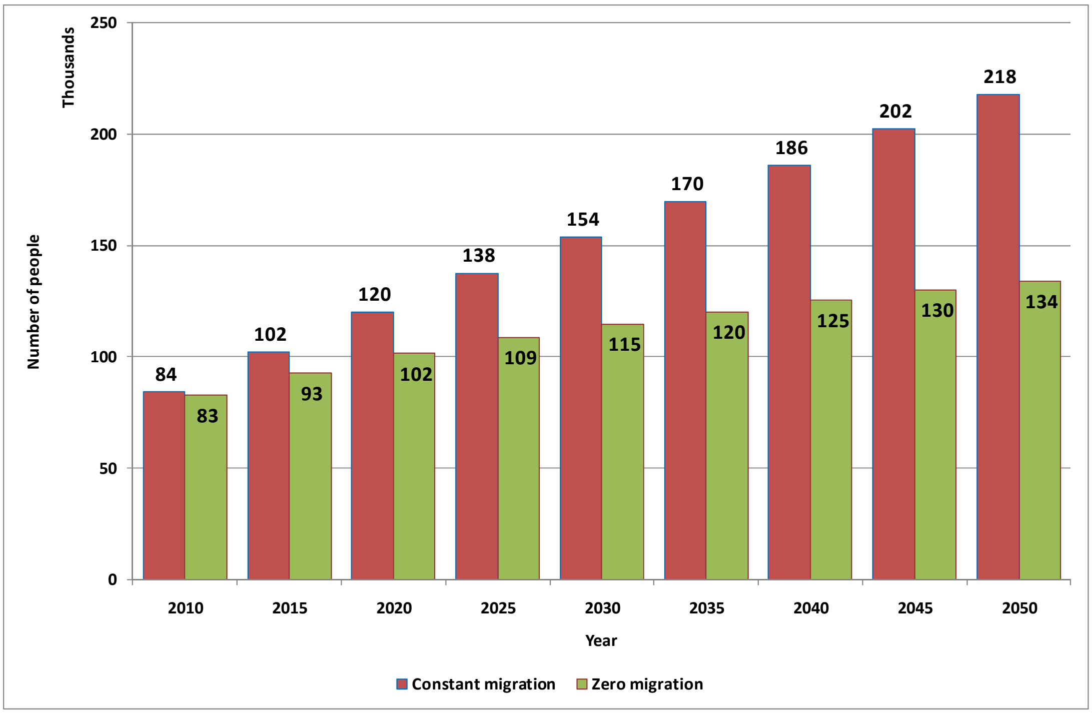
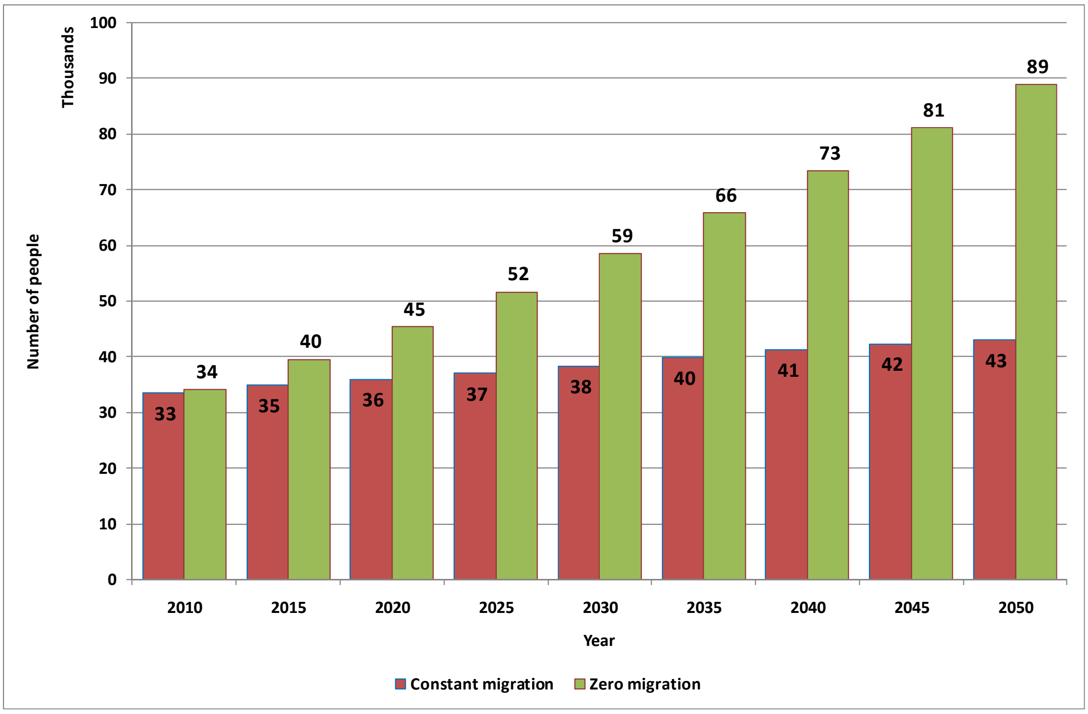


Figure 189: Population size according to two different migration variants, Tafea: 2010-2050



7. IMPLICATIONS OF DEMOGRAPHIC TRENDS

7.1 Population dynamics

7.1.1 Growth rate

Vanuatu's annual population growth rate of 2.3% is still one of the highest in the Pacific region. Nevertheless the population density (19 people per sq. km) is one of the lowest in the region.

At a fixed growth rate, the population of Vanuatu would double in 31 years. In addition, Tafea (at 1.1%) and Malampa (at 1.2%) will have their populations doubling in 60 years. Shefa (at 3.7%) would have the lowest doubling time of just 19 years caused by its growing urban area of Port Vila.

7.1.2 Fertility

Annual population growth is the result of a relatively high natural growth rate which is caused by high fertility (birth) rates. The average number of children per woman (TFR) has only dropped from about 4.6 to 4.1 children per woman during the 10-year period 1999–2009, and is still one of the highest in the Pacific region.

Should the government wish to influence fertility levels, policies and programmes directed toward the expansion of family-planning services and reproductive health programmes should be considered. In the rural areas, access to services is of importance.

Life education, as part of the curriculum, is one means of ensuring that young people are provided with the information and support they may need. Access to education should extend beyond school age and be part of a life long process. The availability and accessibility of family planning services for women (and their partners) of all ages will empower them to make conscious decisions about the number and spacing of their births. Furthermore, pregnancies of young women are often unwanted and the result of unprotected sex. This is a major health concern, especially considering the risk of HIV/AIDS and sexually transmitted diseases.

The promotion of arranged marriages at an early age, through custom and culture, can affect fertility.

Teen pregnancy is a social issue; children of teenage mothers often have lower educational levels, higher rates of poverty, and other poorer "life outcomes". In general, teenage pregnancy usually occurs outside of marriage and, for this reason it often carries a social stigma. Social protection for solo parents and young mothers can include the provision of child support and maintenance.

Many stakeholders are involved in teenage reproductive health strategies, working at various levels to reduce teenage pregnancy by increasing the knowledge and practice of family planning, promoting peer education, providing sex education advisory services including contraceptives, involving young people in service design, educating the parents of teenagers on effective communication, providing better support for teenage mothers (such as help returning to education, advice and support), working with young fathers, giving better childcare, and increasing the availability of supported housing.

7.1.3 Mortality

Improved mortality rates mean that healthier people live longer lives.

Based on census data for the number of children ever born and still alive, the infant mortality rate (IMR) was estimated at 21; 22 for males and 19 for females. This estimate is lower than the 1999 levels when the IMR was 27 and 26 for males and females – and is thus an improvement in infant mortality rates.

Estimates of mortality level presented in this report suggest that females live longer than males, and live on average about three years longer than males. Life expectancy at birth is estimated at 69.6 and 72.7 for males and females, respectively. This represents an increase compared to 1999 when it was 65.6 and 69.0 years for males and females.

The figures in Vanuatu compare with levels of 78.8 and 82.7 years for males and females in New Zealand. Life expectancy at birth in France is 78.1 and 84.8 years for males and females, and in Australia it is 79.3 and 83.9 years. Therefore an average person in New Zealand, France or Australia lives about 10 years longer than a Ni-Vanuatu. On the other hand, life expectancies at birth for Fiji are estimated at 63.8 and 67.7 years for males and females in 2001, which is considerably shorter than in Vanuatu.

7.1.4 Internal migration

Shefa province had the highest growth rate of all provinces – a clear sign of internal migration flows towards Shefa and the capital Port Vila.

Some rural areas and islands show a very low population increase despite high natural growth or sometimes even negative population growth rates (i.e. a population decline) during the intercensal period. These developments point to a possible dissatisfaction with living conditions in these areas. Reasons may include the lack of education opportunities (for tertiary or vocational/technical qualifications), and limited employment opportunities. The urban centers attract people by offering higher living standards through the availability and accessibility to services such as medical and educational institutions, entertainment facilities, and a wider range of employment opportunities.

If the government wishes to change this trend, at least some of the disadvantages of living in the remote rural areas and outer islands need to be eased by improving the above-mentioned services and opportunities through:

- ✓ Promotion of policies for employment and livelihood in rural areas;
- ✓ Decentralization of services to all provinces;
- ✓ Support of income generating opportunities in other provinces to retain populations, in particular the youth;
- ✓ Provision of better education in the rural areas;
- ✓ Promotion of better market distribution systems;
- ✓ Provision of better and cheaper transport;
- ✓ Conducting of in depth research into youth migration and their reasons for migrating;
- ✓ Provision of basic services for the growing population in the urban/peri-urban areas.

7.1.5 International migration

Data on arrivals and departures remain incomplete for detailed migration analysis.

The net migration level can only be crudely estimated by comparing intercensal population growth with estimated rates of natural increase for the same time period. While this method provides a reasonably robust indication of net migration, planners and policy-makers require more detailed and timelier information on the demographic makeup of opposing migration streams in order to make and implement realistic policy decisions. Hence, further improvements are needed to collect and process information on age, sex and nationality of all arriving and departing passengers in Vanuatu.

If improvements prove to be impossible, an alternative would be to apply the proper demographic methodologies, by comparing the two nearest censuses, to calculate the desired population data. The disadvantage of this option is that this can only be done after the analysis of the latest census is completed. This exercise could prove more time consuming and costly than an efficient registration system that would provide regular and timely migration information.

As the national average annual population growth rates are similar to the estimated natural growth, it can be concluded that net migration rates are negligible, and no significant international migration had occurred during the intercensal period 1999-2009.

7.1.6 Population projections

Knowledge about the current size and structure of a country's population is needed for the formulation and implementation of policies and programmes in almost all areas of public life. Because policies are aimed at achieving goals in the future, knowledge about future population trends is required.

The population projection scenarios presented in this report point to a continuously growing population for Vanuatu during the next 40 years. The medium-variant scenario of the projections points to a population of about 278 thousand in 2015, 370 thousand in 2030, and 483 thousand people in 2050..

Changes in Vanuatu's population age structure, as a result of possible declining fertility rates, will have an impact on the proportion of the young population aged 0–14. Changes will be reflected in a smaller proportion of those under the age of 15, and a larger working age population aged 15–59. As a result, the dependency ratio of Vanuatu's population will decrease, and the population's median age will increase.

The proportion of the population aged 60 and older will increase from 6% in 20069 to 8–9% of the total population in 2030.

The working age population is expected to increase considerably, both in proportion and in absolute numbers. According to the medium population scenario, the working age population will be about 227 thousand people in 2030, compared to 129 thousand in 2009.

The needs of this larger population size and its different population subgroups should be considered in development plans in areas as diverse as health, education, environment, and economic growth.

7.2 Crosscutting issues

Vanuatu will most likely experience a continued population growth during the next few years. Appropriate health, education, and social welfare programmes must be in place to fulfill the needs and aspirations of Vanuatu's communities.

7.2.1 Vital statistics

A well functioning registration system, able to supply accurate and timely statistics on population developments, is of fundamental importance to planners and policy-makers. To make reliable estimates regarding fertility and mortality indicator levels and trends, a complete registration system needs to be in place; one that records the number of deaths by age and sex, and cause of death, and the number of births by sex and by age of mother, and place of mother's usual place of residence. Improved coordination between all agencies involved is required.

By tracking all immigrants and exiting people, policy-makers will have an accurate and current picture of Vanuatu's total population size and structure. Such information will be indispensable for policy planning purposes and policy formulation.

7.2.2 The environment

Careful use of terrestrial and marine resources forms the basis of a sustainable and healthy life for Vanuatu's people. As such, maintaining a healthy and sustainable living environment should be a top priority for the government and people of Vanuatu. Apart from enabling a good quality of life for local people, conservation of the environment can foster a vibrant tourism industry.

The size and density of the population has a direct impact on water and energy consumption, sewage and waste production, general infrastructure such as roads, the use of land, and the development of agriculture and marine resources.

High population densities put considerable stress on the environment. Consequently, there is a higher demand on environmental health services, such as public garbage collection, and most importantly, a well-functioning sewage system. In addition, water sources need to be protected.

7.2.3 Households

Population growth not only contributes to an increased demand in water and energy supply, waste disposal, sewage connections and general infrastructure, but also to an increase in the number of households due to changes in average household size. Even if the population size remained stable, the number of households would still increase when households and/or family structures break up into smaller units, often described as the transition from extended family type households to nuclear family type living arrangements.

Households and families that are economically incapable of sustaining an acceptable and healthy lifestyle might need extra assistance from the government, since unhealthy living environments affect everyone in the long term. In particular, access to clean water, public electricity, an adequate public sewage system and waste disposal facilities should all be the minimum housing standard for Vanuatu's population. Specific areas of assistance include:

- *Dwellings*: 25% of dwellings in rural areas are more than 10 yrs old and are prone to natural disaster. As such, government needs to improve housing in rural areas using local materials which are affordable and cyclone proof.

- *Water supply*: 33% of total households in Tafea use the river, lake, or spring as sources of water. The development of more community programmes focusing on water supply, and providing water tanks, or water pumps is required.

- *Lighting*: 48% of households in Vanuatu use kerosene lamps as the main source of light and mainly in the rural areas. With continued rising prices, kerosene is no longer an affordable source for the home, community, school, or business. Alternatives are needed and 'green power' sources such as solar (currently used by 4% of households), wind, or renewable energy should be researched. In this respect, government could encourage students to enter into engineering or environmental studies.

- *Toilet facilities*: 88% of the total households in Penama use the pit-latrine which is not a hygienic toilet facility. Health awareness programmes and assistance in the introduction and improvement of toilet facilities are needed.

7.2.4 Health services and well-being

The health status of each individual and his/her family members is probably one of the most important concerns people have. Therefore, the availability, use and affordability of quality health care and medical services are major issues of concern. Government and health officials need to address the challenges of health services and the health care system.

In Vanuatu's remote areas and outer islands, small population size and isolation inhibit the operation of state-of-the-art health services that require the employment of specialist personnel and the purchase and maintenance of specialised equipment. However resident medical staff needs to be sufficiently qualified to provide basic health care. An efficient referral service to the nearest health facility, together with regular visits by medical specialists, is needed to ensure that peoples' health demands are met.

The population projections have shown that the population aged 60 and older will increase in future. This requires strengthening of special services for the growing number of elderly people, including a pension scheme with retirement benefits, and specialised health care for the elderly.

In working towards a healthier population, the following efforts should be made:

- ✓ Improve infant, child and maternal health by improving primary health care programmes;
- ✓ Improve emergency obstetric care to decrease neo natal mortality
- ✓ Expand immunization programmes;
- ✓ Prevent HIV and AIDS, and other STIs by:

    - Increasing awareness and knowledge of safer sexual behaviours and practices by using appropriate language;
    - Targeting priority groups (youth, women and men, particularly aged 10–24);
    - Enhancing education programmes to encourage open discussions (between partners and their children) on issues of sexual behaviours;
    - Promoting and disseminating information outlining the advantages and proper use of condoms by men and women, with an emphasis on targeting male organisations;
    - Reviewing, developing, implementing and evaluating the effectiveness of appropriate policies;
    - Delaying young peoples' initial sexual activity;
    - Developing a well-planned media campaign throughout the year based on health promotion with regards to HIV and AIDS;
    - Ensuring protection of the rights of people living with HIV and AIDS;
    - Ensuring that people living with HIV and AIDS have free and unrestricted access to medical treatment, facilities and support services;
    - Ensuring that a reliable HIV and AIDS testing system is in place;
    - Establishing a voluntary, confidential system of HIV and AIDS testing with informed consent that includes pre and post test counseling;

- ✓ Address the increasing occurrence of Non Communicable Diseases (NCDs);
- ✓ Combat the prevalence of diabetes and heart disease;
- ✓ Promote healthy eating habits and food nutrition programmes;
- ✓ Advocate a general healthy life style including regular physical exercise; and
- ✓ Discourage smoking and excessive alcohol consumption;
- ✓ Provide a hygienic and safe living environment;
- ✓ Improve the quality of drinking water;

- ✓ Distribute bednets as a way of combating malaria.

7.2.5 Disabilities

Vanuatu is a signatory to a United Nations convention to uphold the rights of people with disabilities; and is therefore obliged to:

"Promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and to promote respect for their inherent dignity."

7.2.6 Education

Educational level is a key indicator of development and quality of life in a country. Education plays an important role in development through its links with demographic, as well as economic and social factors. In general, there is a close and complex relationship between education, fertility, morbidity, mortality and mobility: when couples are better educated, they tend to have fewer children, their children's health status improves, and their survival rates tend to increase. Higher levels of educational attainment also contribute to a better qualified workforce, higher wages, and better economic performance than for people who have little or no formal education and training.

The Ministry of Education has made considerable progress towards achieving universal primary education. As a result of broad consultation processes and the SWA (Sector wide approach) used in developing the Vanuatu Education Sector Strategy 2007-2016, the Ministry of Education realigned its priorities towards universal primary education and literacy.

Constraints for universal primary education identified during this process were the costs of maintaining the dual education system with separate streams for 'English' and 'French' as the language of instruction and the need to achieve an integrated system of bilingual schools.

A concerted effort with development partners to provide 'fee free' primary level education up to Year 6 in Government and Government-assisted schools began in some areas in 2009 and achieved full coverage in 2010. Compulsory primary school contributions have been phased out and replaced by grants paid directly to the schools. This was in direct response to declining primary enrolment rates which were around 95% in 2005 but decreased to 80% in 2008; and subsequent research highlighted rising parental contributions (school fees) as one of the main reasons why enrolment rates were falling. Other options for government include; considering increasing school budgets (for materials and teachers) to reduce year eight drop-outs. In addition, the building of vocational centres featuring youth development programmes could provide life skills (including family planning). The programmes may reduce teenage delinquency, and teenage pregnancy, while providing youth the skills they need to be part of the work force and community.

School attendance, educational attainment, and literacy rates are much lower in the rural than in the urban areas. The provinces of Tafea and Torba require specific attention.

7.2.7 Economic activity and labour market

Economic activity and employment are shaped by the size of the working age population, the educational skill level of the labour force, and the economic resources available to a country.

Although a high proportion (71%) of Vanuatu's population aged 15 and older was economically active (in the labour force), only a relatively small proportion (30%) was engaged in paid employment. These relatively few people (42 thousand) supported the rest of the population with respect to paid income, meaning that one paid person supports, on average, about 4.5 other people.

Vanuatu enjoys the benefits of migrant labour with Government agreements with New Zealand and Australia. The most popular country was New Zealand and its Recognized Seasonal Employer (RSE) programme began in 2007 with a pilot and larger numbers followed thereafter. The Australian pilot was in 2009. The workers are mostly unskilled and are mainly involved in agricultural work.

During the year before the census, almost 8 thousand N-Vanuatu workers and their families benefitted from these agreements, and will hopefully continue to benefit in future.

According to projection results presented in this report, the working age population will increase significantly during the next years. Government and business officials are encouraged to collaborate in developing innovative strategies that will promote economic diversification and growth.

7.2.8 Communication and internet use

The access and use of telecommunications has increased a lot since liberalization in the mid 2008. Existing research in telecommunications suggests that access can increase economic growth, attract foreign investment, improve market efficiencies, increase accessibility to health and education and empower women and others. The telecommunication sector is presumed to provide new opportunities and frontiers across businesses, social, economic and political arena. An improvement in the infrastructure and facilities of telecommunications will have a direct effect on the well being of individuals in the country.

i) Examples where assistance is needed include:

- *Mobile phone access*: 90% of Torba household do not have mobile phone; this may be due to a coverage issue. Government should negotiate with telecommunication companies to discuss improvements in phone coverage to Torba and Tafea.

- *Radio availability*: 82% and 80% of households in Tafea and Torba do not have radio; this may be mainly due to limited radio coverage. One way to improve coverage to remote areas is through the establishment of provincial radio stations devoted mainly to culture, sport, education, and health awareness programmes.

- Better coverage for radio and phone services in the rural areas is vital in improving communication in the areas of health (family planning), and education.

ii) Examples where assistance can be provided include:

- The use of the internet to provide online medical advice;
- Registration of births using mobile phones;
- Dissemination of computers to school children as part of an education programme, as per the SPC one laptop per child programme.

7.2.9 Good governance

Good governance and effective policy-making should provide the framework for sustainable development within which the interrelationship of population, environment, and all possible socioeconomic aspects of a country can prosper cohesively.

In this regard it is important that policy-makers, planners, politicians and community leaders are aware of the needs and aspirations of their country's people in order to effectively provide for the specific needs of the population, and the different population sub-groups. Then government needs to know about its country’s population structure, population processes and socioeconomic characteristics in order to plan for an adequate standard of living, and for a proper provision and distribution of goods and services.

GLOSSARY

Indicator	Definition
Age–dependency ratio	Number of people in the "dependent" age category (population younger than 15 years plus population 60 years and older) per 100 in the "economically productive ages" 15–59 years
Average age at (first) marriage (SMAM)	Approximation of average age at marriage, based on proportion of population never married (single)
Balance equation	Population growth = births – deaths + net migration
Births — estimated number for 2009	Estimated age-specific fertility rates (ASFR) multiplied by enumerated number of women by age in 2009
Child-woman ratio (CWR)	Number of children under age 5 per 1,000 women aged 15-49
Child mortality rate (1q5)	The probability of dying between age 1 and age 5
Crude birth rate (CBR)	Estimated number of births per 1,000 population (7,335/234,023 X 1,000)
Crude death rate (CDR)	Estimated number of deaths per 1,000 population (1,260/234,023 X 1,000)
Crude net migration rate	Rate of growth minus rate of natural increase
Deaths — estimated number for 2009	Estimated age-specific death rates [m(x)] by sex (from life multiplied by enumerated population by age and sex in 2009
Employment–population ratio	Proportion of employed people in cash work (by a given age and sex), as part of the corresponding total number of people of the same age and sex
General fertility rate	Annual number of births per 1,000 women of childbearing age (15-49)
Gini coefficient	The Gini coefficient is a measure of the inequality of a distribution, a value of 0 expressing total equality and a value of 1 maximal inequality.
Infant mortality rate (IMR)	Number of infant deaths (children younger than 1 year) per 1,000 births

Institutions	Boarding schools, prisons, hospitals, hotels/hostels/guesthouses, and mobile households (passenger boats)
Intercensal period	Time period between two censuses
Labour force	People employed (cash work plus village work) and unemployed (excludes those not seeking employment)
Labour force participation rate	Proportion of people in the labour force (by a given age and sex), as part of the corresponding total number of people of the same age and sex
Language ability	see Literacy rate
Life expectancy at birth	Number of years a newborn baby can expect to live on average
Life expectancy at age 20	Number of additional years a 20 year old can expect to live on average
Literacy rate	Proportion of the population age 15 years and older or 15-24 years, who are able to read and write a simple sentence in any language
Mean age at childbearing	Average age of women when giving birth
Median age	The age at which exactly half the population is older and half is younger
Parity (average)	Average number of children per woman
Rate of growth (%)	Average annual growth rate during 1999–2009 ln(TotPop2009/TotPop1999)/10 X 100
Rate of natural increase	Crude birth rate (CBR) minus crude death rate (CDR)
Sex ratio	Number of males per 100 females
Teenage fertility rate	Number of births by women aged 15–19 per 1,000
Total fertility rate (TFR)	Average number of children per woman
Under 5 mortality (q5)	The probability of dying between birth and age 5
Urban population	Total population of the towns Luganville in province Sanma and Port Vila in province Shefa

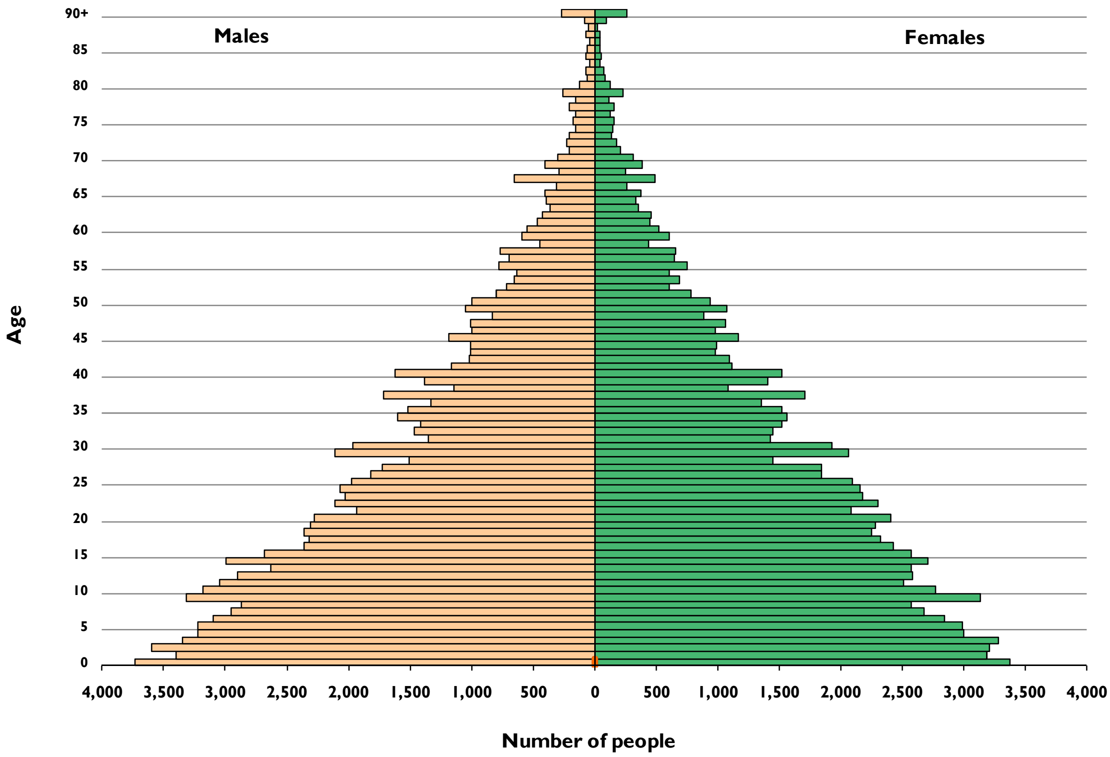
APPENDICES

Appendix 1: Accuracy of age reporting - indices of age heaping

The 2009 Vanuatu census population shows the following distinct age patterns (Fig.A1):

1. Age heaping at ages ending with '0, '7' and '9', and avoidance of ages ending in '8';
2. Relatively high number of people aged 75 years and older, and of these more males than females.

Figure A1: Population pyramid, Vanuatu: 2009



Regarding the above:

1. The occurrence of age heaping is expressed by the calculated Whipple, Myers, Bachi, and the United Nations age-sex accuracy indexes (Table A1).

Table A1: Age accuracy indices, Vanuatu: 1999 and 2009

Census year	Myers'		Bachi		Whipples		UN
	Males	Females	Males	Females	Males	Females	Secretariat
1999	10.1	8.2	6.5	5.6	117	117	24.3
2009	7.8	7.2	5.5	5.2	112	110	26.4

With respect to the interpretation of these indices:

A. **Myers** – the higher the index, the greater the concentration on the age examined. Positive values show a preference for the digit, and negative values avoidance of the digit (Figs.2a/b). The index calculated for males is **7.8** and for females **7.2.** As a comparison, the index for the 1999 Vanuatu census population was 10.1 and 8.2 for males and females respectively. The theoretical range of Myer's index is 0, representing no heaping, to 90, which would result if all ages were reported at a single digit.

   Figure 2b shows high indexes for ages ending with a '0' and '9', and to a lesser degree '7' and '5'; these indexes are over represented.

   Indexes with a negative value such as '8', and '1', '2', and '3' were avoided and are underrepresented.

B. **Bachi** – the higher the index, the greater the concentration on the age examined. Positive values show a preference for the digit, and negative values avoidance of the digit. The index calculated for Males is **5.5**; Females **5.2**, which compares to 6.5 and 5.6 for males and females for the 1999 census (Figs.3a/b). The Bachi index as indicator of the general extend of heaping differs little from Myers'. The theoretical range of Bach's index is also 0, representing no heaping, to 90, which would result if all ages were reported at a single digit, say zero.

   Figure 3b shows high indexes for ages ending with a '7', '0' and '9', and to a lesser degree '5'; these indexes are over represented.

   Indexes with a negative value such as '8', and '1', '2', and '3' were avoided and are underrepresented.

C. **Whipple**: Males and Females was 112 and 110 respectively. This measure means that the Vanuatu population overstated ages ending in 0 or 5 by 12% and 10% for males and females. As a comparison, the index for 1999 Vanuatu census population was 117 for both males and females.

The decrease of the different indices is an indication that age reporting in the 2009 census has improved compared to the 1999 census.

In general it is not possible to measure digit preference precisely, because an accurate distinction between the error due to digit preference, other errors, and real fluctuations cannot be made. Therefore none of the above indexes provides a critical value of age heaping/misreporting because of each country-specific effect of past trends of births, deaths and migration on a population's age distribution. The genuine fluctuations become the more pronounced the smaller the population (sample) size.
Nonetheless, the fluctuations observed suggest some faulty reporting.

Finally, the *United Nations age-sex accuracy index* for the Vanuatu 1999 and 2009 census populations is calculated. It shows a (corrected) index of 24.3 and 26.4 for the 1999 and 2009 censuses respectively. Census age-sex data are described by the United Nations as "accurate", "inaccurate", or "highly inaccurate" depending on whether the UN index is under 20, 20-40, or over 40. However, this procedure as a measurement of age-sex accuracy is labeled as *questionable*[13] due to its problematic underlying assumptions made.

Figure 2a: Myers Preference by digit, Vanuatu: 1999

Figure 2b: Myers Preference by digit, Vanuatu: 2009

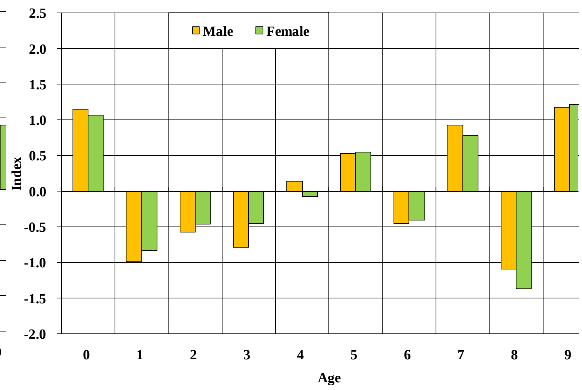


Figure 3a: Bachi Preference by digit, Vanuatu: 1999

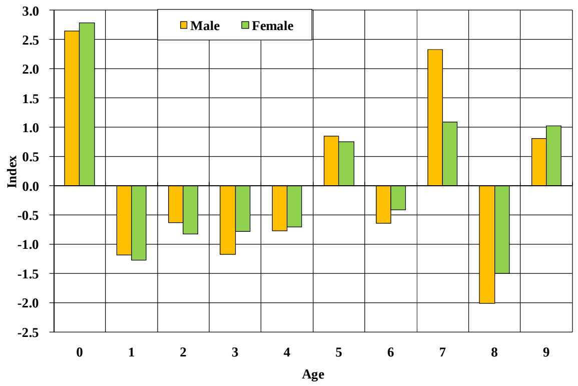
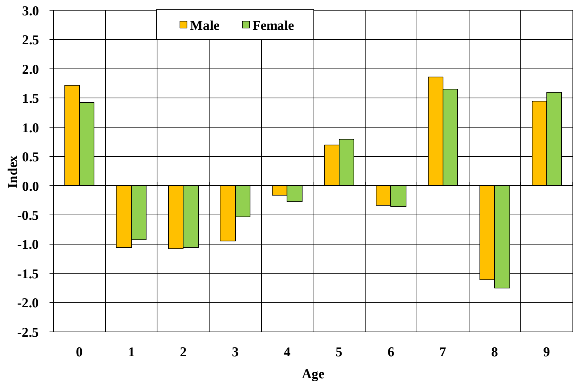


Figure 3b: Bachi Preference by digit, Vanuatu: 2009



Source: US Census Bureau, Population Analysis Spreadsheets (PAS), procedure SINGAGE

[13] *Methods and Materials of Demography, Second Edition, Jacob S. Siegel/David A. Swanson, p.150*

2. With respect to the second observation made, the occurrence of higher number of males than females at older ages has to be regarded as suspect, because life expectancy of females is estimated to be higher than males (more females survive to older ages than males). Furthermore, census data show that the proportion of widowed females at older ages is significantly higher than males. The number of widows increases (much) faster than widowers at older ages. This is explained by the higher death rates among men. Thus there are more widows than widowers among the old. Furthermore the question on whether a respondent's father and/or mother were still alive revealed that the proportion of surviving mothers was significantly higher than that of fathers.

These findings contradict the access count of older males versus females, and points to:

a. Under-enumeration of (older) females, and/or
b. (Sex-selective) age misreporting - old people (particularly males) reported to be even older than they really were.

Appendix 2: Arraiga's approach for estimation of ASFR for one point (1999) in time and the age pattern of fertility (Brass)

Month November
Year **1999**

Fertility pattern is tabulated by age of woman at enumeration

Age Group of Women	Children Ever Born	Age Specific Fertility Pattern	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date	Fertility Pattern by Age at Birth of Child	Cumulation of A.S.F.R.	Cumulation of Fertility Pattern by Age at Birth	Adjustment Factors	Age Specific Fertility Rates Based on Adjustment Factor for the Age Group 20 - 25	25 - 30	20 - 30
Nov-99											
				Recorded	Calculated						
15 - 20	0.129	0.042	0.091	0.042	0.054	0.091	0.054	1.700	0.065	0.063	0.064
20 - 25	0.997	0.194	0.218	0.194	0.204	0.309	0.257	1.201	0.244	0.238	0.241
25 - 30	2.100	0.204	0.228	0.204	0.201	0.537	0.459	1.171	0.242	0.236	0.239
30 - 35	3.256	0.158	0.208	0.158	0.153	0.745	0.611	1.219	0.184	0.179	0.181
35 - 40	4.058	0.109	0.116	0.109	0.104	0.862	0.716	1.204	0.125	0.122	0.124
40 - 45	4.573	0.054	0.070	0.054	0.050	0.932	0.765	1.218	0.060	0.058	0.059
45 - 50	4.782	0.036	0.026	0.036	0.032	0.958	0.797	1.202	0.038	0.037	0.037
Mean Age of Childbearing:			27.54		27.76						
Total Fertility Rate:			4.79		3.99				4.78	4.67	**4.73**

Appendix 3: Arraiga's approach for estimation of ASFR for one point (2009) in time and the age pattern of fertility (Brass)

Month November
Year **2009**

Fertility pattern is tabulated by age of woman at enumeration

Age Group of Women	Children Ever Born	Age Specific Fertility Pattern	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date	Fertility Pattern by Age at Birth of Child	Cumulation of A.S.F.R.	Cumulation of Fertility Pattern by Age at Birth	Adjustment Factors	Age Specific Fertility Rates Based on Adjustment Factor for the Age Group 20 - 25	25 - 30	20 - 30
Nov-09											
				Recorded	Calculated						
15 - 20	0.096	0.044	0.076	0.044	0.055	0.076	0.055	1.386	0.063	0.062	0.063
20 - 25	0.887	0.180	0.203	0.180	0.188	0.279	0.244	1.146	0.216	0.212	0.214
25 - 30	1.898	0.190	0.205	0.190	0.187	0.484	0.431	1.123	0.214	0.210	0.212
30 - 35	2.927	0.146	0.185	0.146	0.141	0.669	0.572	1.170	0.162	0.158	0.160
35 - 40	3.635	0.098	0.102	0.098	0.093	0.771	0.664	1.161	0.106	0.104	0.105
40 - 45	4.109	0.045	0.063	0.045	0.041	0.834	0.705	1.183	0.047	0.046	0.047
45 - 50	4.418	0.015	0.023	0.015	0.012	0.857	0.717	1.196	0.014	0.013	0.014
Mean Age of Childbearing:			27.56		27.30						
Total Fertility Rate:			4.29		3.59				4.11	4.03	**4.07**

Appendix 4: Arraiga's approach for estimation of ASFR for two points (19999 and 2009) in time and the age patterns of fertility (Arriaga-Brass)

First Enumeration
Month November
Year 1999

Fertility pattern is tabulated by age of woman at enumeration

Age Group of Women	Children Ever Born	Age Specific Fertility Pattern	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date	Fertility Pattern by Age at Birth of Child	Cumulation of A.S.F.R.	Cumulation of Fertility Pattern by Age at Birth	Adjustment Factors	Age Specific Fertility Rates Based on Adjustment Factor for the Age Group 20 - 25	25 - 30	20 - 30
November 1999 to November 2000											
				Recorded	Calculated						
15 - 20	0.129	0.042	0.087	0.042	0.054	0.087	0.054	1.624	0.061	0.059	0.060
20 - 25	0.997	0.194	0.206	0.194	0.204	0.293	0.257	1.139	0.232	0.222	0.227
25 - 30	2.100	0.204	0.206	0.204	0.201	0.500	0.459	1.089	0.229	0.219	0.224
30 - 35	3.256	0.158	0.175	0.158	0.153	0.674	0.611	1.102	0.174	0.166	0.170
35 - 40	4.058	0.109	0.074	0.109	0.104	0.748	0.716	1.045	0.119	0.114	0.116
40 - 45	4.573	0.054	0.038	0.054	0.050	0.786	0.765	1.026	0.057	0.054	0.055
45 - 50	4.782	0.036	0.014	0.036	0.032	0.800	0.797	1.003	0.036	0.034	0.035
Mean Age of Childbearing:			26.66		27.76						
Total Fertility Rate:			4.00		3.99				4.54	4.34	**4.44**

Second Enumeration
Month November
Year 2009

Fertility pattern is tabulated by age of woman at enumeration

Age Group of Women	Children Ever Born	Age Specific Fertility Pattern	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date	Fertility Pattern by Age at Birth of Child	Cumulation of A.S.F.R.	Cumulation of Fertility Pattern by Age at Birth	Adjustment Factors	Age Specific Fertility Rates Based on Adjustment Factor for the Age Group 20 - 25	25 - 30	20 - 30
November 2008 to November 2009											
				Recorded	Calculated						
15 - 20	0.096	0.044	0.074	0.044	0.056	0.074	0.056	1.326	0.061	0.058	0.059
20 - 25	0.887	0.180	0.193	0.180	0.188	0.266	0.244	1.091	0.206	0.197	0.201
25 - 30	1.898	0.190	0.185	0.190	0.187	0.452	0.431	1.047	0.204	0.196	0.200
30 - 35	2.927	0.146	0.154	0.146	0.141	0.605	0.572	1.058	0.154	0.148	0.151
35 - 40	3.635	0.098	0.061	0.098	0.093	0.666	0.665	1.001	0.102	0.098	0.100
40 - 45	4.109	0.045	0.031	0.045	0.041	0.698	0.706	0.988	0.045	0.043	0.044
45 - 50	4.418	0.015	0.012	0.015	0.012	0.709	0.718	0.988	0.013	0.012	0.012
Mean Age of Childbearing:			26.56		27.29						
Total Fertility Rate:			3.55		3.59				3.92	3.76	**3.84**

Appendix 5: Fertility estimates using the Trussell P/F Ratio Technique, PAS procedure PFRATIO, Vanuatu: 1999

Age	Reported ASFR f(i)	Average CEB P(i)	Cumulative fertility Phi(i)	F(i)	P/F ratio
15-19	0.042	0.129	0.209	0.079	1.627
20-24	0.194	0.997	1.177	0.762	1.307
25-29	0.204	2.100	2.199	1.803	1.164
30-34	0.158	3.256	2.991	2.694	1.208
35-39	0.109	4.058	3.539	3.337	1.216
40-44	0.054	4.573	3.811	3.658	1.250
45-49	0.036	4.782	3.993	3.950	1.211
Age code	0.000				
TFR	3.993				

* Age code: ASFR based on age of mother at:
0 census/survey
1 birth of child

		Adjusted ASFR's			
		P2/F2	P3/F3	P4/F4	Avg(P3/F3,P4/F4)
Age	ASFR *	1.307	1.164	1.208	1.186
15-19	0.054	0.070	0.062	0.065	0.064
20-24	0.203	0.266	0.237	0.246	0.241
25-29	0.202	0.264	0.235	0.244	0.239
30-34	0.153	0.200	0.178	0.185	0.182
35-39	0.105	0.137	0.122	0.127	0.124
40-44	0.050	0.065	0.058	0.060	0.059
45-49	0.032	0.042	0.037	0.039	0.038
TFR	3.99	5.22	4.65	4.82	**4.74**

* Pattern corrected for one-half year between birth and reporting.
ASFR Age-specific fertility rate.
CEB Average number of children ever born.

Appendix 6: Fertility estimates using the Trussell P/F Ratio Technique, PAS procedure PFRATIO, Vanuatu: 2009

Age	Reported ASFR f(i)	Average CEB P(i)	Cumulative fertility Phi(i)	F(i)	P/F ratio
15-19	0.044	0.096	0.218	0.085	1.136
20-24	0.180	0.887	1.118	0.730	1.214
25-29	0.190	1.898	2.067	1.698	1.118
30-34	0.146	2.927	2.797	2.525	1.159
35-39	0.098	3.635	3.285	3.108	1.169
40-44	0.045	4.109	3.510	3.421	1.201
45-49	0.015	4.418	3.586	3.568	1.238
Age code	0.000				
TFR	3.586				

* Age code: ASFR based on age of mother at:
0 census/survey
1 birth of child

		Adjusted ASFR's			
		P2/F2	P3/F3	P4/F4	Avg(P3/F3,P4/F4)
Age	ASFR *	1.214	1.118	1.159	1.139
15-19	0.055	0.067	0.062	0.064	0.063
20-24	0.189	0.229	0.211	0.219	0.215
25-29	0.187	0.227	0.209	0.217	0.213
30-34	0.141	0.171	0.158	0.163	0.161
35-39	0.093	0.113	0.104	0.108	0.106
40-44	0.041	0.050	0.046	0.048	0.047
45-49	0.012	0.014	0.013	0.014	0.014
TFR	3.59	4.35	4.01	4.16	**4.08**

* Pattern corrected for one-half year between birth and reporting.
ASFR Age-specific fertility rate.
CEB Average number of children ever born.

Appendix 7: Fertility estimates using the Relational Gompertz method, Vanuatu: 1999 and 2009

Summary Estimates of the Total Fertility Rate - 1999

Age	Based on CEB only		Based on ASFR and CEB	
	2+2 points	3+3 points	2+2 points	3+3 points
15-19	4.331	4.627	7.267	4.909
20-24	4.896	5.220	5.096	5.999
25-29	4.673	4.900	4.417	5.546
30-34	4.794	4.944	4.504	5.410
35-39	4.730	4.808	4.542	5.067
40-44	4.731	4.755	4.666	4.845
45-49	4.793	4.795	4.786	4.806
Average	4.707	4.864	5.040	5.226
Average (20-39)	4.773	4.968	**4.640**	5.506

2+2 points based on the age groups 15-19 to 35-39

3+3 points based on the age groups 15-19 to 45-49

CEB Children ever born.

ASFR Age-specific fertility rate.

Summary Estimates of the Total Fertility Rate - 2009

Age	Based on CEB only		Based on ASFR and CEB	
	2+2 points	3+3 points	2+2 points	3+3 points
15-19	3.706	3.833	4.734	3.684
20-24	4.369	5.189	4.302	4.755
25-29	4.130	4.830	3.905	4.474
30-34	4.213	4.715	4.014	4.463
35-39	4.174	4.449	4.057	4.311
40-44	4.229	4.320	4.191	4.273
45-49	4.425	4.436	4.422	4.430
Average (15-49)	4.178	4.539	4.232	4.342
Average (20-39)	4.221	4.796	**4.069**	4.501

2+2 points based on the age groups 15-19 to 35-39

3+3 points based on the age groups 15-19 to 45-49

CEB Children ever born.

ASFR Age-specific fertility rate.

Appendix 8: Abridged life table - Males, Torba: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0152	0.0150	100,000	1,500	98,628	0.9843	6,716,094	**67.2**
1	0.0005	0.0020	98,500	197	393,529	0.9960	6,617,466	67.2
5	0.0011	0.0053	98,303	522	490,209	0.9949	6,223,937	63.3
10	0.0010	0.0049	97,781	478	487,708	0.9923	5,733,728	58.6
15	0.0023	0.0113	97,303	1,098	483,962	0.9882	5,246,020	53.9
20	0.0023	0.0116	96,205	1,118	478,238	0.9882	4,762,058	49.5
25	0.0024	0.0120	95,087	1,141	472,611	0.9874	4,283,821	45.1
30	0.0027	0.0135	93,945	1,272	466,633	0.9849	3,811,210	40.6
35	0.0034	0.0170	92,674	1,575	459,600	0.9801	3,344,577	36.1
40	0.0047	0.0235	91,098	2,140	450,443	0.9714	2,884,977	31.7
45	0.0071	0.0347	88,959	3,091	437,545	0.9572	2,434,534	27.4
50	0.0107	0.0523	85,868	4,489	418,814	0.9352	1,996,988	23.3
55	0.0165	0.0795	81,379	6,473	391,656	0.9019	1,578,175	19.4
60	0.0254	0.1199	74,906	8,979	353,221	0.8532	1,186,519	15.8
65	0.0391	0.1788	65,928	11,790	301,363	0.7814	833,298	12.6
70	0.0613	0.2665	54,138	14,427	235,496	0.6785	531,934	9.8
75	0.0966	0.3885	39,711	15,428	159,785	0.4610	296,438	7.5
80	0.1777	...	24,283	24,283	136,653	...	136,653	5.6

Appendix 9: Abridged life table - Females, Torba: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0193	0.0190	100,000	1,900	98,285	0.9800	7,119,434	**71.2**
1	0.0008	0.0030	98,100	294	391,693	0.9969	7,021,149	71.6
5	0.0005	0.0024	97,806	236	488,440	0.9978	6,629,456	67.8
10	0.0004	0.0021	97,570	204	487,342	0.9970	6,141,016	62.9
15	0.0008	0.0042	97,367	410	485,891	0.9950	5,653,674	58.1
20	0.0011	0.0056	96,957	540	483,462	0.9944	5,167,783	53.3
25	0.0011	0.0055	96,417	531	480,765	0.9942	4,684,321	48.6
30	0.0012	0.0062	95,885	596	477,983	0.9930	4,203,556	43.8
35	0.0016	0.0081	95,289	775	474,619	0.9900	3,725,572	39.1
40	0.0025	0.0125	94,514	1,177	469,857	0.9837	3,250,953	34.4
45	0.0043	0.0211	93,337	1,966	462,181	0.9726	2,781,096	29.8
50	0.0071	0.0349	91,372	3,190	449,526	0.9543	2,318,915	25.4
55	0.0120	0.0584	88,182	5,154	428,973	0.9258	1,869,389	21.2
60	0.0194	0.0926	83,028	7,692	397,137	0.8830	1,440,416	17.3
65	0.0314	0.1460	75,336	10,998	350,690	0.8169	1,043,279	13.8
70	0.0511	0.2276	64,338	14,641	286,493	0.7199	692,589	10.8
75	0.0829	0.3441	49,697	17,101	206,241	0.4921	406,096	8.2
80	0.1631	...	32,596	32,596	199,856	...	199,856	6.1

Appendix 10: Abridged life table - Males, Sanma: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,868	0.9742	6,982,924	**69.8**
1	0.0013	0.0050	97,600	488	389,219	0.9954	6,885,056	70.5
5	0.0006	0.0030	97,112	291	484,831	0.9972	6,495,837	66.9
10	0.0005	0.0025	96,821	244	483,493	0.9965	6,011,005	62.1
15	0.0010	0.0048	96,577	468	481,806	0.9942	5,527,513	57.2
20	0.0013	0.0066	96,109	634	478,997	0.9934	5,045,706	52.5
25	0.0013	0.0066	95,475	630	475,813	0.9931	4,566,709	47.8
30	0.0015	0.0074	94,845	706	472,513	0.9916	4,090,896	43.1
35	0.0019	0.0097	94,139	909	468,543	0.9882	3,618,384	38.4
40	0.0029	0.0145	93,229	1,349	463,020	0.9813	3,149,841	33.8
45	0.0048	0.0237	91,880	2,180	454,377	0.9695	2,686,822	29.2
50	0.0078	0.0385	89,700	3,451	440,529	0.9503	2,232,445	24.9
55	0.0130	0.0629	86,248	5,429	418,621	0.9206	1,791,916	20.8
60	0.0207	0.0986	80,820	7,967	385,392	0.8765	1,373,295	17.0
65	0.0331	0.1533	72,853	11,169	337,778	0.8089	987,903	13.6
70	0.0534	0.2364	61,684	14,583	273,242	0.7104	650,125	10.5
75	0.0860	0.3544	47,101	16,691	194,108	0.4850	376,883	8.0
80	0.1664	...	30,410	30,410	182,774	...	182,774	6.0

Appendix 11: Abridged life table - Females, Sanma: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0204	0.0200	100,000	2,000	98,200	0.9790	7,242,868	**72.4**
1	0.0008	0.0030	98,000	294	391,292	0.9971	7,144,668	72.9
5	0.0004	0.0018	97,706	174	488,095	0.9984	6,753,375	69.1
10	0.0003	0.0015	97,532	148	487,290	0.9979	6,265,281	64.2
15	0.0006	0.0030	97,384	288	486,262	0.9963	5,777,991	59.3
20	0.0008	0.0042	97,096	410	484,484	0.9958	5,291,729	54.5
25	0.0008	0.0041	96,686	397	482,446	0.9957	4,807,245	49.7
30	0.0009	0.0046	96,289	445	480,372	0.9947	4,324,799	44.9
35	0.0012	0.0061	95,845	588	477,842	0.9923	3,844,428	40.1
40	0.0020	0.0097	95,256	928	474,160	0.9869	3,366,585	35.3
45	0.0035	0.0173	94,329	1,633	467,932	0.9770	2,892,426	30.7
50	0.0060	0.0298	92,695	2,759	457,183	0.9602	2,424,494	26.2
55	0.0106	0.0518	89,936	4,655	438,966	0.9335	1,967,311	21.9
60	0.0174	0.0837	85,281	7,136	409,787	0.8931	1,528,345	17.9
65	0.0288	0.1347	78,145	10,528	365,977	0.8293	1,118,557	14.3
70	0.0476	0.2138	67,616	14,455	303,518	0.7348	752,580	11.1
75	0.0782	0.3279	53,161	17,433	223,014	0.5034	449,062	8.4
80	0.1581	...	35,728	35,728	226,048	...	226,048	6.3

Appendix 12: Abridged life table - Males, Penama: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,868	0.9742	6,617,252	**66.2**
1	0.0013	0.0050	97,600	488	389,219	0.9939	6,519,385	66.8
5	0.0012	0.0059	97,112	571	484,133	0.9945	6,130,165	63.1
10	0.0010	0.0050	96,541	487	481,488	0.9927	5,646,032	58.5
15	0.0021	0.0103	96,054	991	477,969	0.9886	5,164,545	53.8
20	0.0024	0.0120	95,063	1,143	472,500	0.9878	4,686,576	49.3
25	0.0025	0.0124	93,921	1,169	466,713	0.9869	4,214,077	44.9
30	0.0028	0.0141	92,751	1,303	460,586	0.9844	3,747,364	40.4
35	0.0035	0.0176	91,448	1,610	453,389	0.9794	3,286,778	35.9
40	0.0049	0.0242	89,839	2,174	444,058	0.9706	2,833,388	31.5
45	0.0072	0.0355	87,665	3,116	431,008	0.9563	2,389,330	27.3
50	0.0109	0.0532	84,549	4,500	412,181	0.9342	1,958,322	23.2
55	0.0168	0.0806	80,049	6,452	385,041	0.9007	1,546,141	19.3
60	0.0257	0.1212	73,597	8,918	346,806	0.8518	1,161,100	15.8
65	0.0395	0.1803	64,680	11,663	295,407	0.7799	814,294	12.6
70	0.0617	0.2682	53,016	14,218	230,374	0.6767	518,886	9.8
75	0.0972	0.3904	38,798	15,146	155,899	0.4596	288,512	7.4
80	0.1783	...	23,652	23,652	132,613	...	132,613	5.6

Appendix 13: Abridged life table - Females, Penama: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0298	0.0290	100,000	2,900	97,465	0.9684	7,171,110	**71.7**
1	0.0018	0.0070	97,100	680	386,745	0.9948	7,073,645	72.8
5	0.0004	0.0018	96,420	172	481,671	0.9984	6,686,900	69.4
10	0.0003	0.0014	96,248	137	480,901	0.9982	6,205,229	64.5
15	0.0005	0.0025	96,112	238	480,016	0.9967	5,724,328	59.6
20	0.0008	0.0040	95,874	385	478,444	0.9960	5,244,312	54.7
25	0.0008	0.0039	95,489	372	476,521	0.9959	4,765,868	49.9
30	0.0009	0.0044	95,117	417	474,577	0.9950	4,289,347	45.1
35	0.0012	0.0058	94,700	553	472,204	0.9926	3,814,770	40.3
40	0.0019	0.0093	94,147	878	468,731	0.9874	3,342,567	35.5
45	0.0034	0.0167	93,269	1,560	462,808	0.9777	2,873,836	30.8
50	0.0059	0.0289	91,710	2,654	452,503	0.9611	2,411,028	26.3
55	0.0104	0.0507	89,056	4,512	434,908	0.9348	1,958,525	22.0
60	0.0171	0.0822	84,544	6,948	406,558	0.8948	1,523,617	18.0
65	0.0283	0.1328	77,596	10,307	363,781	0.8314	1,117,059	14.4
70	0.0470	0.2114	67,290	14,227	302,464	0.7373	753,278	11.2
75	0.0774	0.3251	53,063	17,252	223,013	0.5053	450,814	8.5
80	0.1572	...	35,810	35,810	227,801	...	227,801	6.4

Appendix 14: Abridged life table - Males, Malampa: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,868	0.9742	6,916,384	**69.2**
1	0.0013	0.0050	97,600	488	389,219	0.9952	6,818,517	69.9
5	0.0007	0.0034	97,112	332	484,729	0.9968	6,429,297	66.2
10	0.0006	0.0029	96,780	280	483,198	0.9960	5,944,568	61.4
15	0.0011	0.0056	96,500	543	481,247	0.9933	5,461,371	56.6
20	0.0015	0.0074	95,957	714	478,040	0.9925	4,980,124	51.9
25	0.0015	0.0075	95,243	713	474,448	0.9921	4,502,084	47.3
30	0.0017	0.0085	94,530	800	470,708	0.9905	4,027,636	42.6
35	0.0022	0.0109	93,730	1,022	466,226	0.9868	3,556,928	37.9
40	0.0032	0.0161	92,707	1,492	460,067	0.9795	3,090,702	33.3
45	0.0052	0.0258	91,215	2,355	450,631	0.9671	2,630,634	28.8
50	0.0084	0.0412	88,860	3,662	435,815	0.9472	2,180,004	24.5
55	0.0137	0.0663	85,198	5,651	412,815	0.9168	1,744,188	20.5
60	0.0217	0.1030	79,547	8,194	378,451	0.8716	1,331,373	16.7
65	0.0343	0.1587	71,353	11,325	329,847	0.8031	952,922	13.4
70	0.0550	0.2429	60,029	14,580	264,890	0.7035	623,075	10.4
75	0.0882	0.3618	45,449	16,444	186,347	0.4797	358,184	7.9
80	0.1688	…	29,005	29,005	171,837	…	171,837	5.9

Appendix 15: Abridged life table - Females, Malampa: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0162	0.0160	100,000	1,600	98,542	0.9833	7,256,880	**72.6**
1	0.0005	0.0020	98,400	197	393,128	0.9978	7,158,339	72.7
5	0.0004	0.0018	98,203	180	490,566	0.9983	6,765,210	68.9
10	0.0003	0.0016	98,023	158	489,723	0.9977	6,274,644	64.0
15	0.0007	0.0033	97,866	327	488,580	0.9960	5,784,922	59.1
20	0.0009	0.0044	97,539	432	486,636	0.9956	5,296,342	54.3
25	0.0009	0.0043	97,107	420	484,492	0.9955	4,809,706	49.5
30	0.0010	0.0049	96,687	470	482,298	0.9945	4,325,214	44.7
35	0.0013	0.0064	96,217	620	479,627	0.9919	3,842,916	39.9
40	0.0020	0.0102	95,596	972	475,756	0.9864	3,363,289	35.2
45	0.0036	0.0179	94,625	1,695	469,265	0.9763	2,887,533	30.5
50	0.0062	0.0306	92,929	2,844	458,151	0.9592	2,418,268	26.0
55	0.0108	0.0529	90,085	4,763	439,453	0.9322	1,960,117	21.8
60	0.0177	0.0852	85,322	7,267	409,676	0.8914	1,520,664	17.8
65	0.0292	0.1366	78,055	10,664	365,187	0.8272	1,110,988	14.2
70	0.0482	0.2161	67,391	14,565	302,096	0.7322	745,801	11.1
75	0.0790	0.3307	52,826	17,469	221,203	0.5015	443,705	8.4
80	0.1589	…	35,357	35,357	222,502	…	222,502	6.3

Appendix 16: Abridged life table - Males, Shefa: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0224	0.0220	100,000	2,200	98,033	0.9766	7,036,602	**70.4**
1	0.0010	0.0040	97,800	391	390,256	0.9961	6,938,570	70.9
5	0.0006	0.0028	97,409	269	486,371	0.9974	6,548,313	67.2
10	0.0005	0.0024	97,140	228	485,127	0.9967	6,061,942	62.4
15	0.0009	0.0046	96,911	447	483,527	0.9945	5,576,815	57.5
20	0.0012	0.0062	96,464	598	480,859	0.9938	5,093,288	52.8
25	0.0012	0.0062	95,866	592	477,861	0.9935	4,612,429	48.1
30	0.0014	0.0070	95,274	664	474,760	0.9921	4,134,568	43.4
35	0.0018	0.0091	94,610	858	471,022	0.9889	3,659,807	38.7
40	0.0028	0.0137	93,752	1,284	465,789	0.9822	3,188,785	34.0
45	0.0046	0.0227	92,468	2,100	457,509	0.9707	2,722,996	29.4
50	0.0076	0.0371	90,368	3,355	444,104	0.9518	2,265,486	25.1
55	0.0126	0.0613	87,013	5,330	422,689	0.9226	1,821,383	20.9
60	0.0202	0.0964	81,683	7,871	389,955	0.8789	1,398,693	17.1
65	0.0324	0.1506	73,812	11,115	342,737	0.8119	1,008,738	13.7
70	0.0525	0.2331	62,697	14,617	278,274	0.7139	666,001	10.6
75	0.0848	0.3506	48,081	16,855	198,662	0.4876	387,727	8.1
80	0.1652	...	31,225	31,225	189,065	...	189,065	6.1

Appendix 17: Abridged life table - Females, Shefa: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0121	0.0120	100,000	1,200	98,892	0.9877	7,335,757	**73.4**
1	0.0003	0.0010	98,800	99	394,964	0.9985	7,236,864	73.2
5	0.0003	0.0016	98,701	155	493,116	0.9985	6,841,900	69.3
10	0.0003	0.0014	98,546	143	492,370	0.9978	6,348,784	64.4
15	0.0006	0.0032	98,403	319	491,282	0.9963	5,856,413	59.5
20	0.0008	0.0040	98,083	394	489,446	0.9960	5,365,131	54.7
25	0.0008	0.0039	97,689	381	487,501	0.9959	4,875,685	49.9
30	0.0009	0.0044	97,309	426	485,512	0.9950	4,388,184	45.1
35	0.0012	0.0058	96,882	566	483,084	0.9926	3,902,672	40.3
40	0.0019	0.0093	96,316	898	479,532	0.9874	3,419,587	35.5
45	0.0034	0.0167	95,419	1,596	473,472	0.9777	2,940,056	30.8
50	0.0059	0.0289	93,823	2,715	462,929	0.9611	2,466,584	26.3
55	0.0104	0.0507	91,108	4,616	444,929	0.9348	2,003,654	22.0
60	0.0171	0.0822	86,492	7,108	415,927	0.8948	1,558,725	18.0
65	0.0283	0.1328	79,384	10,544	372,163	0.8314	1,142,799	14.4
70	0.0470	0.2114	68,840	14,555	309,434	0.7373	770,635	11.2
75	0.0774	0.3251	54,285	17,650	228,151	0.5053	461,202	8.5
80	0.1572	...	36,636	36,636	233,050	...	233,050	6.4

Appendix 18: Abridged life table - Males, Tafea: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,868	0.9742	6,905,245	**69.1**
1	0.0013	0.0050	97,600	488	389,219	0.9951	6,807,377	69.7
5	0.0007	0.0035	97,112	340	484,711	0.9968	6,418,158	66.1
10	0.0006	0.0030	96,772	286	483,146	0.9959	5,933,447	61.3
15	0.0012	0.0058	96,486	556	481,149	0.9932	5,450,300	56.5
20	0.0015	0.0076	95,930	727	477,872	0.9923	4,969,152	51.8
25	0.0015	0.0076	95,203	728	474,211	0.9920	4,491,280	47.2
30	0.0017	0.0086	94,475	816	470,394	0.9903	4,017,069	42.5
35	0.0022	0.0111	93,659	1,042	465,823	0.9865	3,546,675	37.9
40	0.0033	0.0164	92,617	1,516	459,555	0.9792	3,080,852	33.3
45	0.0053	0.0262	91,100	2,385	449,984	0.9667	2,621,297	28.8
50	0.0085	0.0417	88,716	3,697	435,008	0.9467	2,171,313	24.5
55	0.0138	0.0669	85,019	5,687	411,829	0.9161	1,736,305	20.4
60	0.0218	0.1037	79,332	8,230	377,282	0.8708	1,324,476	16.7
65	0.0345	0.1596	71,102	11,348	328,523	0.8021	947,194	13.3
70	0.0553	0.2439	59,754	14,576	263,510	0.7024	618,670	10.4
75	0.0886	0.3630	45,178	16,401	185,078	0.4789	355,160	7.9
80	0.1692	…	28,777	28,777	170,082	…	170,082	5.9

Appendix 19: Abridged life table - Females, Tafea: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0371	0.0360	100,000	3,600	96,926	0.9603	7,213,254	**72.1**
1	0.0025	0.0100	96,400	964	383,233	0.9931	7,116,328	73.8
5	0.0003	0.0013	95,436	127	476,863	0.9988	6,733,095	70.6
10	0.0002	0.0010	95,309	97	476,304	0.9988	6,256,232	65.6
15	0.0003	0.0016	95,212	155	475,710	0.9977	5,779,928	60.7
20	0.0006	0.0030	95,057	286	474,604	0.9970	5,304,219	55.8
25	0.0006	0.0029	94,771	272	473,179	0.9970	4,829,614	51.0
30	0.0006	0.0032	94,499	304	471,761	0.9963	4,356,435	46.1
35	0.0009	0.0044	94,195	411	470,015	0.9944	3,884,675	41.2
40	0.0014	0.0072	93,784	677	467,387	0.9899	3,414,659	36.4
45	0.0027	0.0136	93,107	1,271	462,677	0.9814	2,947,273	31.7
50	0.0050	0.0245	91,836	2,252	454,091	0.9663	2,484,596	27.1
55	0.0091	0.0447	89,584	4,001	438,782	0.9419	2,030,505	22.7
60	0.0153	0.0739	85,583	6,328	413,272	0.9041	1,591,723	18.6
65	0.0259	0.1222	79,255	9,685	373,659	0.8433	1,178,451	14.9
70	0.0437	0.1981	69,570	13,785	315,098	0.7518	804,792	11.6
75	0.0728	0.3093	55,785	17,253	236,889	0.5162	489,694	8.8
80	0.1524	…	38,533	38,533	252,804	…	252,804	6.6

Appendix 20: Total population size and growth by place of residence and sex, Vanuatu: 1999 -2009

Place of residence	Total population size						Population change from 1999 to 2009								
	1999			2009			(in numbers)			(in %)			Annual growth rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
VANUATU	**95682**	**90996**	**186678**	**119091**	**114932**	**234023**	**23409**	**23936**	**47345**	**24.5**	**26.3**	**25.4**	**2.2**	**2.3**	**2.3**
URBAN	**20726**	**19368**	**40094**	**29618**	**27577**	**57195**	**8892**	**8209**	**17101**	**42.9**	**42.4**	**42.7**	**3.6**	**3.5**	**3.6**
Port Vila	15189	14167	29356	22852	21187	44039	7663	7020	14683	50.5	49.6	50.0	4.1	4.0	4.1
Luganville	5537	5201	10738	6766	6390	13156	1229	1189	2418	22.2	22.9	22.5	2.0	2.1	2.0
RURAL	**74956**	**71628**	**146584**	**89473**	**87355**	**176828**	**14517**	**15727**	**30244**	**19.4**	**22.0**	**20.6**	**1.8**	**2.0**	**1.9**
TORBA	**3937**	**3820**	**7757**	**4727**	**4632**	**9359**	**790**	**812**	**1602**	**20.1**	**21.3**	**20.7**	**1.8**	**1.9**	**1.9**
Gaua	1026	1005	2031	1262	1229	2491	236	224	460	23.0	22.3	22.6	2.1	2.0	2.0
Hiu	92	108	200	122	147	269	30	39	69	32.6	36.1	34.5	2.8	3.1	3.0
Kwakea	-	-	-	12	14	26	12	14	26						
Loh	61	78	139	103	107	210	42	29	71	68.9	37.2	51.1	5.2	3.2	4.1
Merelava	347	403	750	296	351	647	-51	-52	-103	-14.7	-12.9	-13.7	-1.6	-1.4	-1.5
Merig	8	11	19	7	5	12	-1	-6	-7	-12.5	-54.5	-36.8	-1.3	-7.9	-4.6
Metoma	5	5	10	8	5	13	3	0	3	60.0	0.0	30.0	4.7	0.0	2.6
Mota	337	349	686	337	346	683	0	-3	-3	0.0	-0.9	-0.4	0.0	-0.1	0.0
Motalava	606	540	1146	716	735	1451	110	195	305	18.2	36.1	26.6	1.7	3.1	2.4
Rah	73	70	143	95	94	189	22	24	46	30.1	34.3	32.2	2.6	2.9	2.8
Tegua	17	22	39	24	34	58	7	12	19	41.2	54.5	48.7	3.4	4.4	4.0
Toga	148	150	298	131	145	276	-17	-5	-22	-11.5	-3.3	-7.4	-1.2	-0.3	-0.8
Ureparapara	185	178	363	226	211	437	41	33	74	22.2	18.5	20.4	2.0	1.7	1.9
Vanualava	1032	901	1933	1388	1209	2597	356	308	664	34.5	34.2	34.4	3.0	2.9	3.0
SANMA	**18676**	**17408**	**36084**	**23623**	**22232**	**45855**	**4947**	**4824**	**9771**	**26.5**	**27.7**	**27.1**	**2.3**	**2.4**	**2.4**
Aese	2	-	2	-	-	-	-2	0	-2						
Aore	236	206	442	279	277	556	43	71	114	18.2	34.5	25.8	1.7	3.0	2.3
Araki	52	46	98	65	75	140	13	29	42	25.0	63.0	42.9	2.2	4.9	3.6
Bokissa	16	14	30	30	26	56	14	12	26	87.5	85.7	86.7	6.3	6.2	6.2
Malo	1868	1664	3532	2260	2019	4279	392	355	747	21.0	21.3	21.1	1.9	1.9	1.9
Malokilikili	9	6	15	6	7	13	-3	1	-2	-33.3	16.7	-13.3	-4.1	1.5	-1.4
Mavea	100	72	172	104	103	207	4	31	35	4.0	43.1	20.3	0.4	3.6	1.9
Santo	15923	14977	30900	20369	19232	39601	4446	4255	8701	27.9	28.4	28.2	2.5	2.5	2.5
Tangoa	188	185	373	199	195	394	11	10	21	5.9	5.4	5.6	0.6	0.5	0.5
Tutuba	281	237	518	311	298	609	30	61	91	10.7	25.7	17.6	1.0	2.3	1.6
Urelapa	1	1	2	-	-	-	-1	-1	-2						

= places with an annual population growth rate of higher than 3 percent between 1999 and 2009

= places that decreased in population size between 1999 and 2009

Appendix 20: Total population size and growth by place of residence and sex, Vanuatu: 1999 -2009 (cont'd.)

Place of residence	Total population size						Population change from 1999 to 2009								
	1999			2009			(in numbers)			(in %)			Annual growth rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
PENAMA	**13724**	**12922**	**26646**	**15543**	**15276**	**30819**	**1819**	**2354**	**4173**	**13.3**	**18.2**	**15.7**	**1.2**	**1.7**	**1.5**
Ambae	4882	4536	9418	5325	5082	10407	443	546	989	9.1	12.0	10.5	0.9	1.1	1.0
Maewo	1656	1515	3171	1805	1764	3569	149	249	398	9.0	16.4	12.6	0.9	1.5	1.2
Pentecost	7186	6871	14057	8413	8430	16843	1227	1559	2786	17.1	22.7	19.8	1.6	2.0	1.8
MALAMPA	**16653**	**16052**	**32705**	**18446**	**18281**	**36727**	**1793**	**2229**	**4022**	**10.8**	**13.9**	**12.3**	**1.0**	**1.3**	**1.2**
Akhamb	311	256	567	324	322	646	13	66	79	4.2	25.8	13.9	0.4	2.3	1.3
Ambrym	3763	3606	7369	3638	3637	7275	-125	31	-94	-3.3	0.9	-1.3	-0.3	0.1	-0.1
Arseo	152	138	290	-	-	-	-152	-138	-290						
Atchin	377	384	761	357	381	738	-20	-3	-23	-5.3	-0.8	-3.0	-0.5	-0.1	-0.3
Avock	74	95	169	79	102	181	5	7	12	6.8	7.4	7.1	0.7	0.7	0.7
Khoti	-	-	-	8	6	14	8	6	14						
Lopevi	1	-	1	-	-	-	-1	0	-1						
Malekula	9762	9222	18984	11600	11302	22902	1838	2080	3918	18.8	22.6	20.6	1.7	2.0	1.9
Maskelynes	425	519	944	481	540	1021	56	21	77	13.2	4.0	8.2	1.2	0.4	0.8
Lembong	-	-	-	31	29	60	31	29	60						
Norsup	43	49	92	41	47	88	-2	-2	-4	-4.7	-4.1	-4.3	-0.5	-0.4	-0.4
Paama	785	848	1633	804	823	1627	19	-25	-6	2.4	-2.9	-0.4	0.2	-0.3	0.0
Rano	129	144	273	155	149	304	26	5	31	20.2	3.5	11.4	1.8	0.3	1.1
Tomman	136	108	244	149	141	290	13	33	46	9.6	30.6	18.9	0.9	2.7	1.7
Uri	34	32	66	15	14	29	-19	-18	-37						
Uripiv	224	220	444	180	204	384	-44	-16	-60	-19.6	-7.3	-13.5	-2.2	-0.8	-1.5
Vao	325	342	667	452	446	898	127	104	231	39.1	30.4	34.6	3.3	2.7	3.0
Wala	112	89	201	132	138	270	20	49	69	17.9	55.1	34.3	1.6	4.4	3.0

= places with an annual population growth rate of higher than 3 percent between 1999 and 2009

= places that decreased in population size between 1999 and 2009

Appendix 20: Total population size and growth by place of residence and sex, Vanuatu: 1999 -2009 (cont'd.)

Place of residence	Total population size						Population change from 1999 to 2009								
	1999			2009			(in numbers)			(in %)			Annual growth rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
SHEFA	**28119**	**26320**	**54439**	**40550**	**38173**	**78723**	**12431**	**11853**	**24284**	**44.2**	**45.0**	**44.6**	**3.7**	**3.7**	**3.7**
Buninga	78	82	160	65	63	128	-13	-19	-32	-16.7	-23.2	-20.0	-1.8	-2.6	-2.2
Efate	21895	20233	42128	34051	31683	65734	12156	11450	23606	55.5	56.6	56.0	4.4	4.5	4.4
Emae	447	403	850	402	341	743	-45	-62	-107	-10.1	-15.4	-12.6	-1.1	-1.7	-1.3
Emau	347	358	705	293	309	602	-54	-49	-103	-15.6	-13.7	-14.6	-1.7	-1.5	-1.6
Epi	2343	2211	4554	2627	2580	5207	284	369	653	12.1	16.7	14.3	1.1	1.5	1.3
Ifira	502	481	983	395	416	811	-107	-65	-172	-21.3	-13.5	-17.5	-2.4	-1.5	-1.9
Iririki	-	-	-	52	46	98	52	46	98						
Kakula	-	-	-	2	2	4	2	2	4						
Lamen	202	208	410	208	232	440	6	24	30	3.0	11.5	7.3	0.3	1.1	0.7
Lelepa	181	169	350	203	184	387	22	15	37	12.2	8.9	10.6	1.1	0.9	1.0
Makira	65	67	132	55	51	106	-10	-16	-26	-15.4	-23.9	-19.7	-1.7	-2.7	-2.2
Mataso	50	51	101	31	43	74	-19	-8	-27	-38.0	-15.7	-26.7	-4.8	-1.7	-3.1
Moso	115	119	234	124	113	237	9	-6	3	7.8	-5.0	1.3	0.8	-0.5	0.1
Nguna	467	492	959	626	629	1255	159	137	296	34.0	27.8	30.9	2.9	2.5	2.7
Pele	123	97	220	170	160	330	47	63	110	38.2	64.9	50.0	3.2	5.0	4.1
Tongariki	119	137	256	132	135	267	13	-2	11	10.9	-1.5	4.3	1.0	-0.1	0.4
Tongoa	1185	1212	2397	1114	1186	2300	-71	-26	-97	-6.0	-2.1	-4.0	-0.6	-0.2	-0.4
TAFEA	**14573**	**14474**	**29047**	**16202**	**16338**	**32540**	**1629**	**1864**	**3493**	**11.2**	**12.9**	**12.0**	**1.1**	**1.2**	**1.1**
Aneityum	420	401	821	481	434	915	61	33	94	14.5	8.2	11.4	1.4	0.8	1.1
Aniwa	218	206	424	164	177	341	-54	-29	-83	-24.8	-14.1	-19.6	-2.8	-1.5	-2.2
Erromango	817	743	1560	969	981	1950	152	238	390	18.6	32.0	25.0	1.7	2.8	2.2
Futuna	202	200	402	264	271	535	62	71	133	30.7	35.5	33.1	2.7	3.0	2.9
Tanna	12916	12924	25840	14324	14475	28799	1408	1551	2959	10.9	12.0	11.5	1.0	1.1	1.1

= places with an annual population growth rate of higher than 3 percent between 1999 and 2009

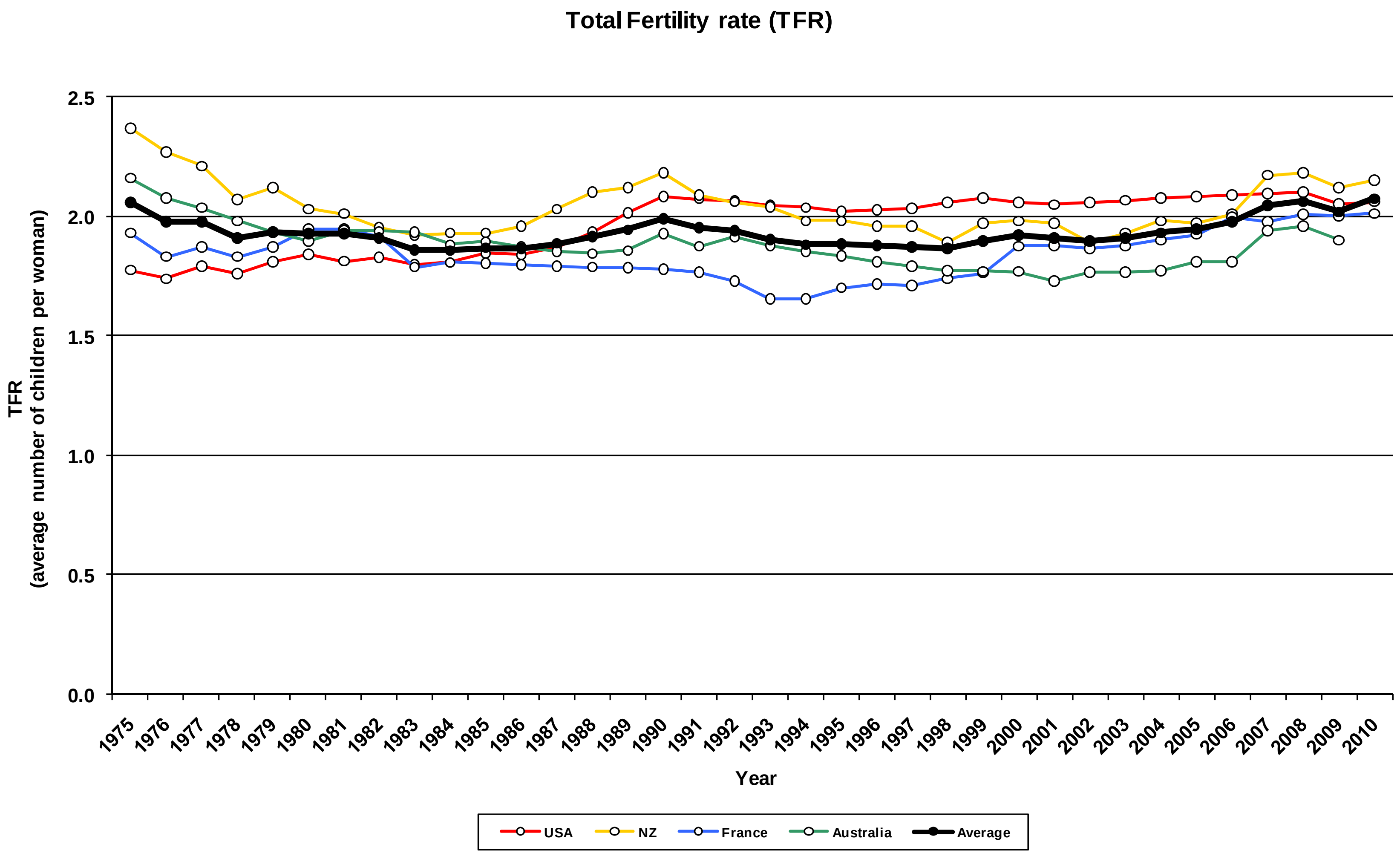
= places that decreased in population size between 1999 and 2009

Appendix 21: Population aged 15 and older by labour market activity, sex, and residence, Vanuatu: 2009

Region/ Sex	Labour Force							Non Labour Force					
	Employer	Self employed	Employee for wage/salary	Unpaid worker	Subsistence work	Un-employed	Total	Full time student	Home duties	Retired/ Old age	Disabled	Other*	Total
Vanuatu	**1,369**	**15,920**	**25,006**	**10,288**	**41,877**	**4,518**	**98,978**	**9,008**	**17,840**	**4,480**	**581**	**8,755**	**40,664**
Males	953	9,215	15,748	5,788	21,942	2,301	55,947	4,625	3,030	1,823	329	3,840	13,647
Females	416	6,705	9,258	4,500	19,935	2,217	43,031	4,383	14,810	2,657	252	4,915	27,017
Urban	828	2,346	14,842	744	1,996	2,798	23,554	4,112	5,393	1,392	136	3,689	14,722
Males	546	1,318	9,019	421	1,131	1,363	13,798	2,073	1,183	668	77	1,807	5,808
Females	282	1,028	5,823	323	865	1,435	9,756	2,039	4,210	724	59	1,882	8,914
Rural	541	13,574	10,164	9,544	39,881	1,720	75,424	4,896	12,447	3,088	445	5,066	25,942
Males	407	7,897	6,729	5,367	20,811	938	42,149	2,552	1,847	1,155	252	2,033	7,839
Females	134	5,677	3,435	4,177	19,070	782	33,275	2,344	10,600	1,933	193	3,033	18,103
Torba	8	397	311	337	2,977	7	4,037	256	560	155	17	214	1,202
Males	7	282	209	215	1,479	6	2,198	135	75	57	13	71	351
Females	1	115	102	122	1,498	1	1,839	121	485	98	4	143	851
Sanma	124	2,827	4,645	1,253	9,788	791	19,428	1,603	3,154	779	102	1,547	7,185
Males	94	1,690	3,049	742	4,979	415	10,969	804	553	358	59	751	2,525
Females	30	1,137	1,596	511	4,809	376	8,459	799	2,601	421	43	796	4,660
Penama	71	3,742	1,074	2,244	6,695	67	13,893	840	1,486	572	94	563	3,555
Males	52	2,200	661	1,154	3,361	35	7,463	443	225	246	59	207	1,180
Females	19	1,542	413	1,090	3,334	32	6,430	397	1,261	326	35	356	2,375
Malampa	99	3,130	1,481	3,031	8,274	312	16,327	930	2,706	691	107	849	5,283
Males	65	1,905	950	1,715	4,321	154	9,110	494	275	228	63	281	1,341
Females	34	1,225	531	1,316	3,953	158	7,217	436	2,431	463	44	568	3,942
Shefa	1,004	4,987	16,100	2,072	6,090	2,516	32,769	4,360	7,615	1,832	181	4,654	18,642
Males	687	2,652	9,963	1,184	3,569	1,246	19,301	2,226	1,656	783	99	2,185	6,949
Females	317	2,335	6,137	888	2,521	1,270	13,468	2,134	5,959	1,049	82	2,469	11,693
Tafea	63	837	1,395	1,351	8,053	825	12,524	1,019	2,319	451	80	928	4,797
Males	48	486	916	778	4,233	445	6,906	523	246	151	36	345	1,301
Females	15	351	479	573	3,820	380	5,618	496	2,073	300	44	583	3,496

* includes: 2,751 people who did not want to work, 897 who did not work because they believed no work was available, 51 who did not work because of weather/transport, 988 ‘Other reasons’, 3,129 not stated, and 939 people who were not available to work

Appendix 22: Level of TFR of Australia, France, New Zealand, and the USA since 1975



Appendix 23: Models for mortality improvement. Quinquennial gains in life expectancy at birth according to initial level of life expectancy (P.125)

Initial life expectancy level (years)	pace of mortality improvement									
	Very fast		Fast		Medium		Slow		Very slow	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
40.0 - 42.5	2.5	2.6	2.1	2.3	1.9	2.0	1.3	1.4	1.1	1.1
42.5 - 45.0	2.8	3.0	2.4	2.5	2.0	2.1	1.4	1.5	1.1	1.2
45.0 - 47.5	3.0	3.1	2.5	2.6	2.1	2.2	1.8	1.9	1.2	1.3
47.5 - 50.0	3.0	3.2	2.6	2.7	2.2	2.3	1.8	1.9	1.3	1.4
50.0 - 52.5	3.2	3.4	2.7	2.9	2.3	2.4	1.9	2.0	1.4	1.5
52.5 - 55.0	3.6	3.7	2.7	3.0	2.4	2.6	2.0	2.0	1.5	1.7
55.0 - 57.5	3.7	3.7	2.6	3.0	2.4	2.6	2.0	2.0	1.5	1.8
57.5 - 60.0	3.8	4.0	2.6	3.0	2.4	2.6	2.0	2.0	1.5	1.8
60.0 - 62.5	3.4	3.8	2.5	3.0	2.2	2.6	1.7	2.0	1.0	1.7
62.5 - 65.0	3.2	3.6	2.3	2.8	1.9	2.4	1.5	2.0	0.9	1.5
65.0 -67.5	3.2	3.5	2.0	2.6	1.6	2.3	1.0	1.8	0.7	1.0
67.5 - 70.0	2.0	3.3	1.5	2.6	1.2	2.1	1.0	1.5	0.6	1.0
70.0 - 72.5	1.5	3.0	1.2	2.0	1.0	1.8	0.8	1.2	0.5	0.8
72.5 - 75.0	1.3	2.0	1.0	1.5	0.9	1.2	0.8	0.9	0.5	0.8
75.0 - 77.5	1.1	1.8	0.8	1.2	0.6	1.0	0.5	0.8	0.5	0.7
77.5 - 80.0	1.0	1.6	0.5	1.0	0.5	0.9	0.4	0.7	0.4	0.5
80.0 - 82.5	0.9	1.4	0.5	0.8	0.5	0.6	0.4	0.5	0.4	0.5
82.5 - 85.0	0.8	1.3	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4
85.0 - 87.5	0.7	1.3	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2
87.5 - 90.0	0.6	1.2	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2
90.0 - 92.5	0.6	0.8	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2

Source: *Table Vi.6. Models for mortality improvement: Quinquennial gains in Life Expectancy at Birth according to initial level of Life Expectancy* (1995. United Nations. World Population Prospects. NewYork: United Nations. 886 p

Appendix 24: The demographic transition

According to the theory of demographic transition, over time all countries will undergo change from high rates of births and deaths to low rates of births and deaths. This transition process is usually closely associated with economic, social and scientific developments. This is assumed to happen in four distinct stages:

Stage 1: High birth rate, high death rate → little or no population growth
Stage 2: High birth rate, falling death rate → high growth
Stage 3: Declining birth rate, relatively low death rate → slowed growth
Stage 4: Low birth rate, low death rate → very low growth

Historically, high levels of births and deaths kept most populations from growing rapidly through time. In fact, many populations not only failed to grow but also completely died out when birth rates did not compensate for high death rates (**stage 1**). There are few populations/communities left today at stage 1.

Death rates eventually fell as living conditions, nutrition and public health improved. The decline in mortality usually preceded the decline in fertility, resulting in population growth during the transition period (**stage 2**). In Europe and other industrialised countries, death rates fell slowly. With the added benefit of medical advances, death rates fell more rapidly in the countries that began the transition in the 20th century. These are/were primarily developing countries. Their death rates often fell much faster than in European countries because they benefited from Western inventions and innovations.

In general, fertility rates fell neither as quickly nor as dramatically as death rates, and thus populations grew rapidly.

Stage 3 is characterized by falling birth rates, which occur for many reasons and vary from country to country and population to population. A decrease in birth rates may result from: a transition from a non-monetary to a monetary economy, urbanization, a change in values from a community emphasis to individualism, increasing emphasis on consumerism, improved education, availability of (modern) family planning methods (i.e. contraceptives), greater involvement of women in the workplace, rising cost of living, rising cost of raising children, and preferences in how people want to spend their time.

The demographic transition is regarded as completed when both birth and death rates have reached a low and stable level (**stage 4**). As a result, population growth is very low.

Originally, the theory of demographic transition included only the four stages described above. There is now another stage, the **post-transition period** (although it is uncertain whether all countries will reach this stage).

Post-transition period: Very low birth rate, low death rate → negative growth

When fertility falls to very low levels and stays there for a protracted period, a slow rate of population growth can turn into a negative one, resulting in a population decrease. Many countries in Europe and some in Asia now have TFRs well below two children per woman. The TFRs of the Republic of Korea, Ukraine, Czech Republic, Slovakia, Slovenia, Republic of Moldova, Bulgaria, and Belarus — all about 1.2 — are among the world's lowest, and those of several other countries were not far behind. The TFRs of Macao and Hong Kong were even less than 1 child per woman on average. Many of the factors that lowered fertility in the first place — greater involvement of women in the workplace, rising cost of living, and preferences in how people want to spend their time — appear to be keeping fertility rates very low.

While the theory of demographic transition describes the population history of western Europe quite well, for many reasons developing countries do not always exhibit the same patterns of change. In some cases early contact with outside societies resulted in local epidemics, as groups succumbed to diseases against which they had no natural immunity, resulting in increased death rates. When health conditions improved as a result of the application of new and efficient disease control technologies, death rates declined, while birth rates sometimes increased. This combination of factors produced population growth rates in today's developing countries that are much higher than ever experienced in pre-industrial Western Europe.

Stylised graph of the European demographic transition

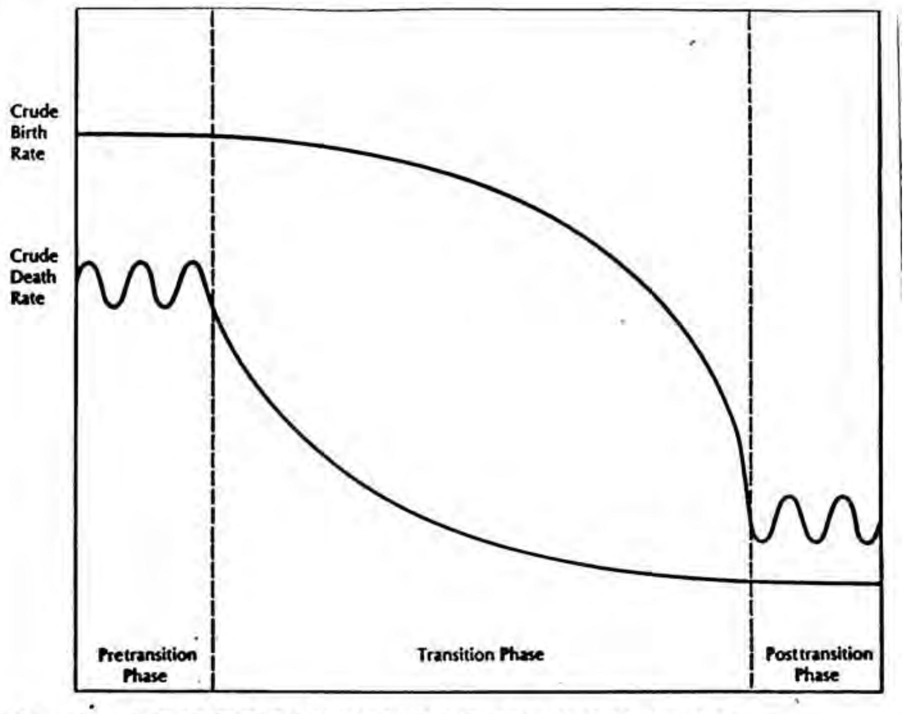


Figure 3–2 A SIMPLIFIED DIAGRAM OF THE EUROPEAN DEMOGRAPHIC TRANSITION
Source: Ansley J. Coale, 1974, p. 49.

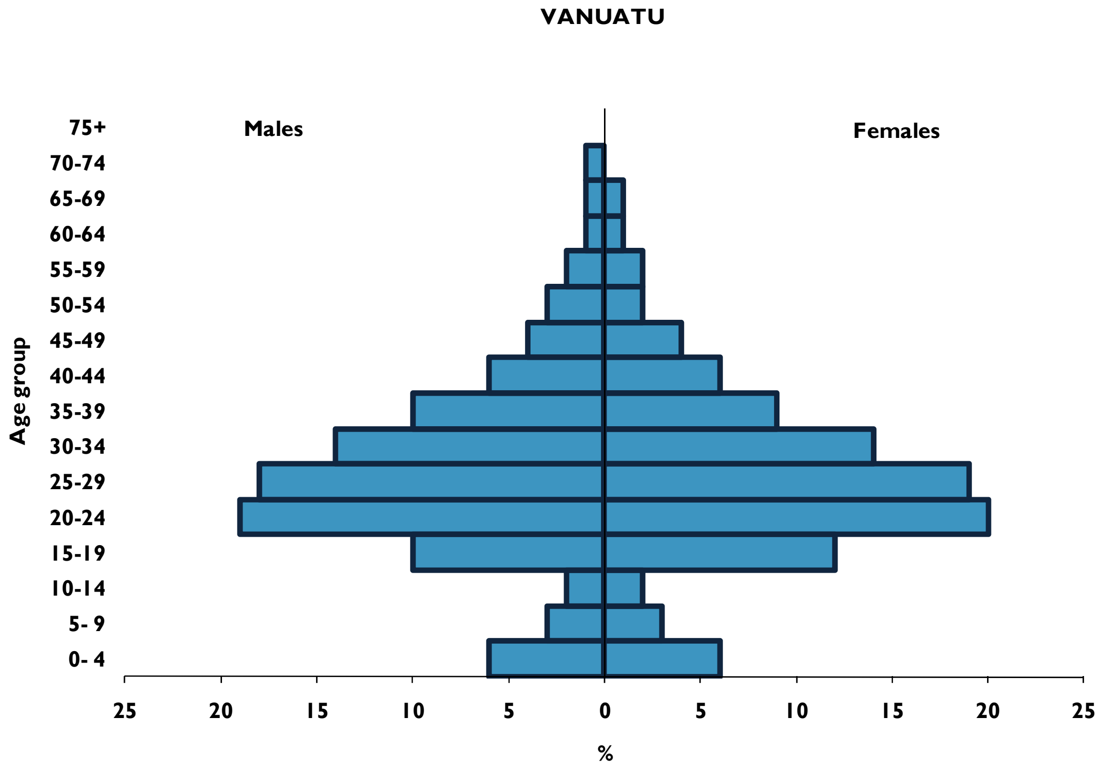
Sources: 2004. Population Handbook, Population Reference Bureau, Inc, Washington D.C., 5th Edition; 1999. Papua New Guinea National Population Policy 2000–2010, Department of Planning

Appendix 25: Base population for projections for each province, 1 July 2009

Age group	TORBA Males	TORBA Females	TORBA Total	SANMA Males	SANMA Females	SANMA Total	PENAMA Males	PENAMA Females	PENAMA Total
0-4	691	695	1,385	3,460	3,170	6,630	2,315	2,233	4,549
5-9	682	633	1,315	3,130	2,864	5,994	2,065	1,989	4,054
10-14	675	579	1,253	2,943	2,655	5,598	2,121	1,909	4,030
15-19	556	503	1,059	2,810	2,775	5,585	1,886	1,637	3,523
20-24	432	439	871	2,368	2,178	4,546	1,279	1,178	2,457
25-29	360	346	706	1,858	1,858	3,716	1,012	1,096	2,107
30-34	265	283	548	1,550	1,613	3,163	899	949	1,847
35-39	284	300	584	1,355	1,382	2,737	898	951	1,849
40-44	207	228	435	1,066	1,117	2,183	732	773	1,505
45-49	145	189	333	987	922	1,909	644	659	1,303
50-54	136	126	262	694	605	1,300	473	504	977
55-59	98	116	214	637	514	1,151	372	477	850
60-64	95	84	180	422	377	799	309	297	606
65-69	73	69	143	397	289	686	292	295	587
70-74	54	35	88	211	128	339	192	182	374
75-79	35	40	74	163	90	254	180	163	343
80+	48	44	91	143	109	252	208	226	434
Total	**4,833**	**4,709**	**9,542**	**24,194**	**22,648**	**46,841**	**15,877**	**15,518**	**31,394**

Age group	MALAMPA Males	MALAMPA Females	MALAMPA Total	SHEFA Males	SHEFA Females	SHEFA Total	TAFEA Males	TAFEA Females	TAFEA Total
0-4	2,637	2,467	5,105	5,221	4,775	9,996	2,826	2,596	5,422
5-9	2,587	2,234	4,821	4,179	3,952	8,131	2,670	2,451	5,121
10-14	2,459	2,167	4,626	4,062	3,683	7,745	2,366	2,068	4,434
15-19	2,049	1,893	3,942	4,949	4,743	9,691	1,597	1,555	3,152
20-24	1,518	1,484	3,002	5,490	4,662	10,152	1,312	1,499	2,811
25-29	1,190	1,379	2,568	3,542	3,304	6,846	1,079	1,239	2,318
30-34	1,109	1,213	2,321	3,021	3,035	6,056	876	1,049	1,925
35-39	994	1,191	2,185	2,619	2,693	5,313	860	922	1,782
40-44	907	1,017	1,924	2,214	2,257	4,471	633	771	1,404
45-49	768	892	1,660	1,904	1,813	3,718	572	661	1,233
50-54	597	648	1,245	1,418	1,276	2,694	436	439	875
55-59	535	601	1,135	1,183	977	2,160	405	394	799
60-64	387	422	809	715	630	1,346	243	301	544
65-69	394	334	729	588	504	1,091	290	267	557
70-74	224	213	437	267	254	521	128	165	293
75-79	216	194	410	223	185	407	115	121	236
80+	244	231	475	191	226	418	88	79	168
Total	**18,816**	**18,579**	**37,395**	**41,786**	**38,971**	**80,756**	**16,495**	**16,576**	**33,071**

Appendix 26: UN migration model: Family migration



Source: UN Population Division, New York, USA

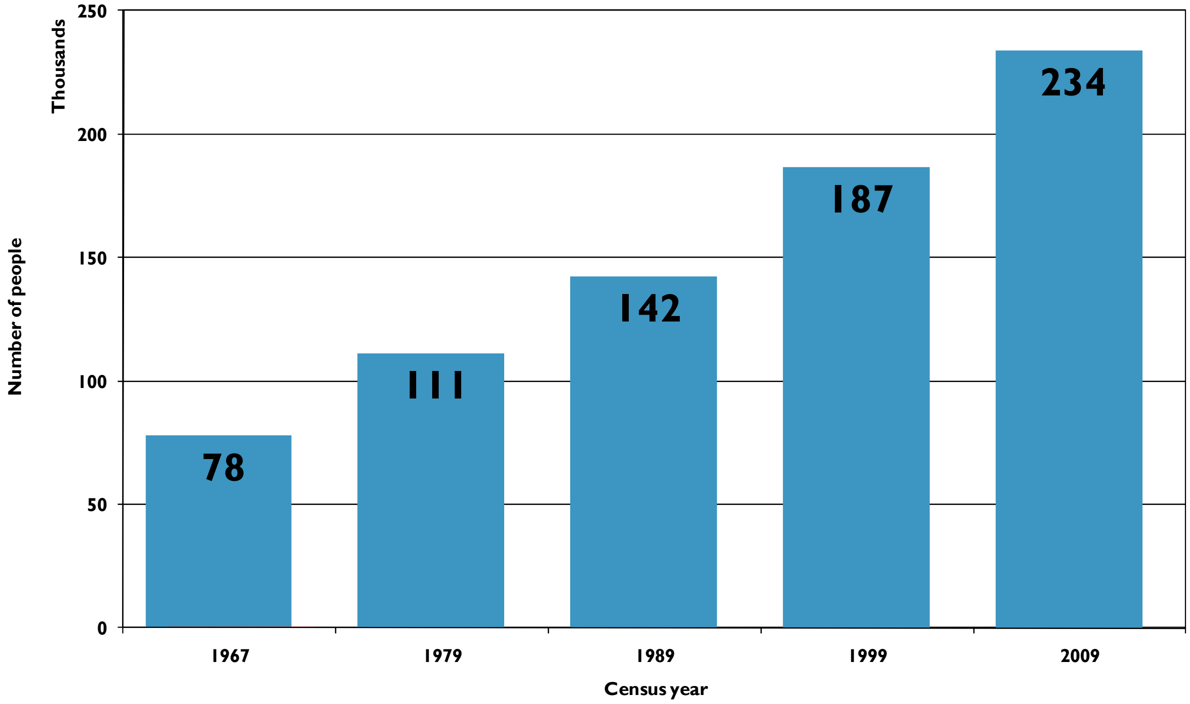
Appendix 27:

Age and sex structure for Vanuatu and each province:

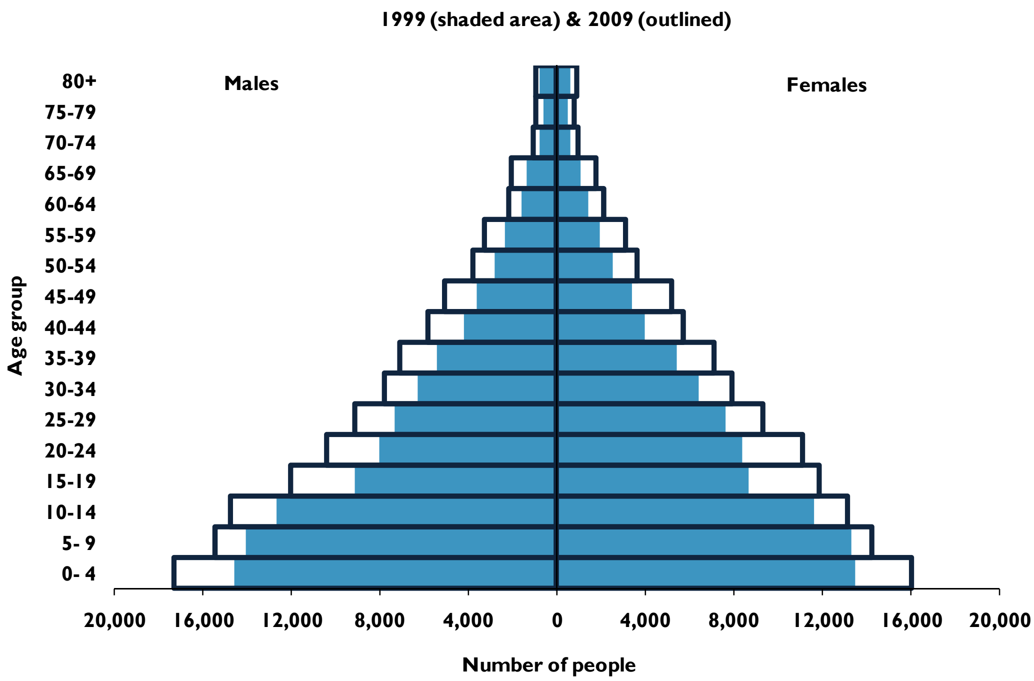
1999 and 2009

VANUATU

Population trend: 1967–2009



Population pyramid by five-year age group and sex, 1999 and 2009



VANUATU

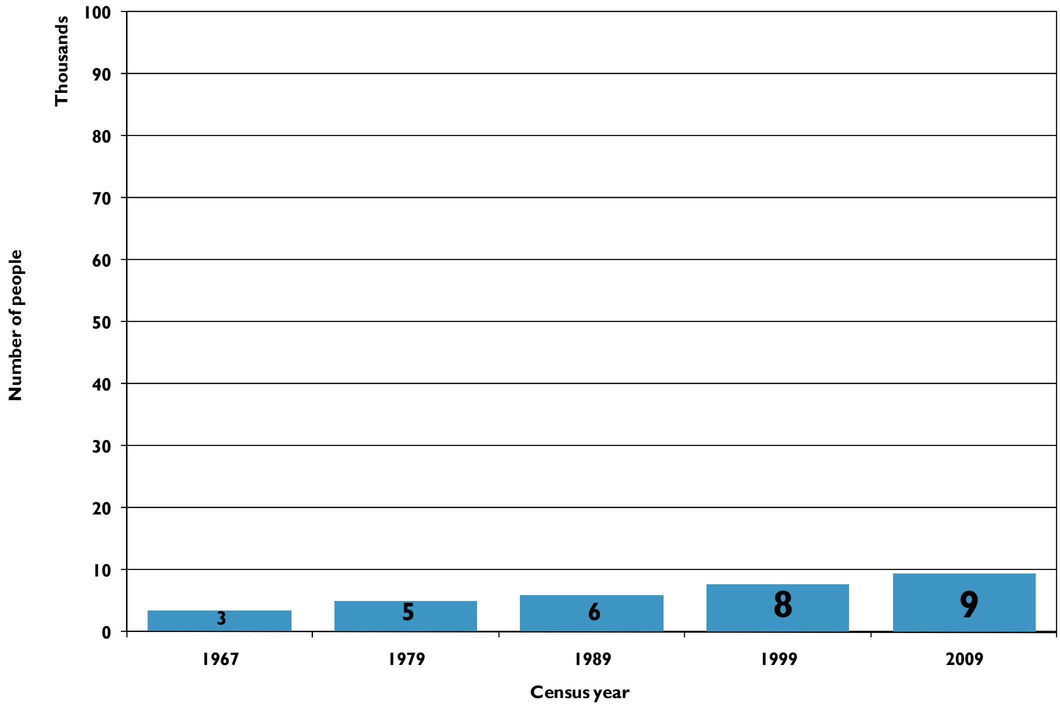
1999				2009			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	14,581	13,484	28,065	0-4	17,310	16,057	33,367
5-9	14,086	13,283	27,369	5-9	15,455	14,230	29,685
10-14	12,670	11,629	24,299	10-14	14,762	13,159	27,921
15-19	9,136	8,666	17,802	15-19	12,027	11,855	23,882
20-24	8,027	8,386	16,413	20-24	10,415	11,126	21,541
25-29	7,303	7,627	14,930	25-29	9,124	9,291	18,415
30-34	6,295	6,397	12,692	30-34	7,790	7,903	15,693
35-39	5,438	5,429	10,868	35-39	7,076	7,095	14,171
40-44	4,198	3,998	8,195	40-44	5,814	5,709	11,523
45-49	3,639	3,373	7,012	45-49	5,066	5,175	10,241
50-54	2,785	2,550	5,335	50-54	3,789	3,626	7,415
55-59	2,328	1,962	4,290	55-59	3,261	3,102	6,363
60-64	1,597	1,428	3,025	60-64	2,192	2,127	4,319
65-69	1,373	1,053	2,426	65-69	2,054	1,772	3,826
70-74	793	638	1,431	70-74	1,085	983	2,068
75-79	624	493	1,117	75-79	941	799	1,740
80+	809	600	1,409	80+	930	923	1,853
Total	95,682	90,996	**186,678**	Total	119,091	114,932	**234,023**
Population by broad age groups (in numbers)							
0-14	41,337	38,397	79,734	**0-14**	47,527	43,446	90,973
15-24	17,163	17,051	34,215	**15-24**	22,442	22,981	45,423
25-59	31,987	31,336	63,323	**25-59**	41,920	41,901	83,821
25-64	33,583	32,764	66,348	**25-64**	44,112	44,028	88,140
60+	5,195	4,212	9,407	**60+**	7,202	6,604	13,806
65+	3,599	2,783	6,382	**65+**	5,010	4,477	9,487
Population by broad age groups (in percentages)							
0-14	43	42	43	**0-14**	40	38	39
15-24	18	19	18	**15-24**	19	20	19
25-59	33	34	34	**25-59**	35	36	36
25-64	35	36	36	**25-64**	37	38	38
60+	5	5	5	**60+**	6	6	6
65+	4	3	3	**65+**	4	4	4
Age dependency ratio							
15-59			**91**	**15-59**			**81**
15-64			**86**	**15-64**			**75**
Sex ratio (males per 100 females)							
			105				**104**
Median age (years)							
Total	**18.6**	**19.1**	**18.8**	**Total**	**20.0**	**21.0**	**20.5**

Population change 1999-2009

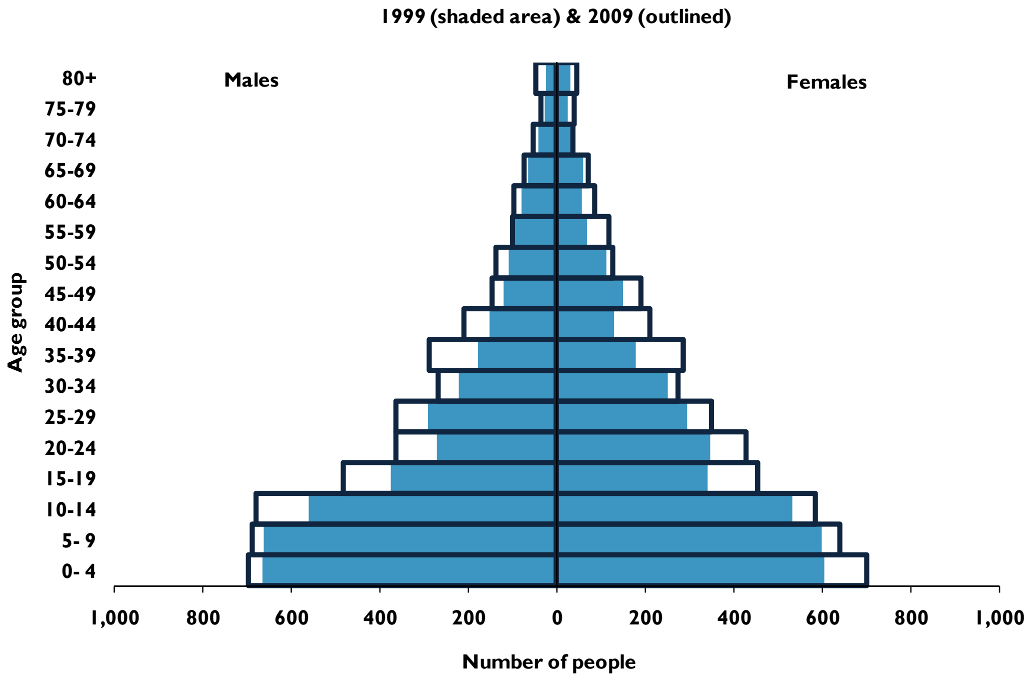
	Males	Females	**Total**
Total difference	23,409	23,936	**47,345**
Average annual change (in numbers)	2,341	2,394	**4,735**
Percentage difference (%)	24.5	26.3	**25.4**
Average annual growth rate (%)	2.19	2.34	**2.26**

TORBA

Population trend: 1967–2009



Population pyramid by five-year age group and sex, 1999 and 2009



TORBA

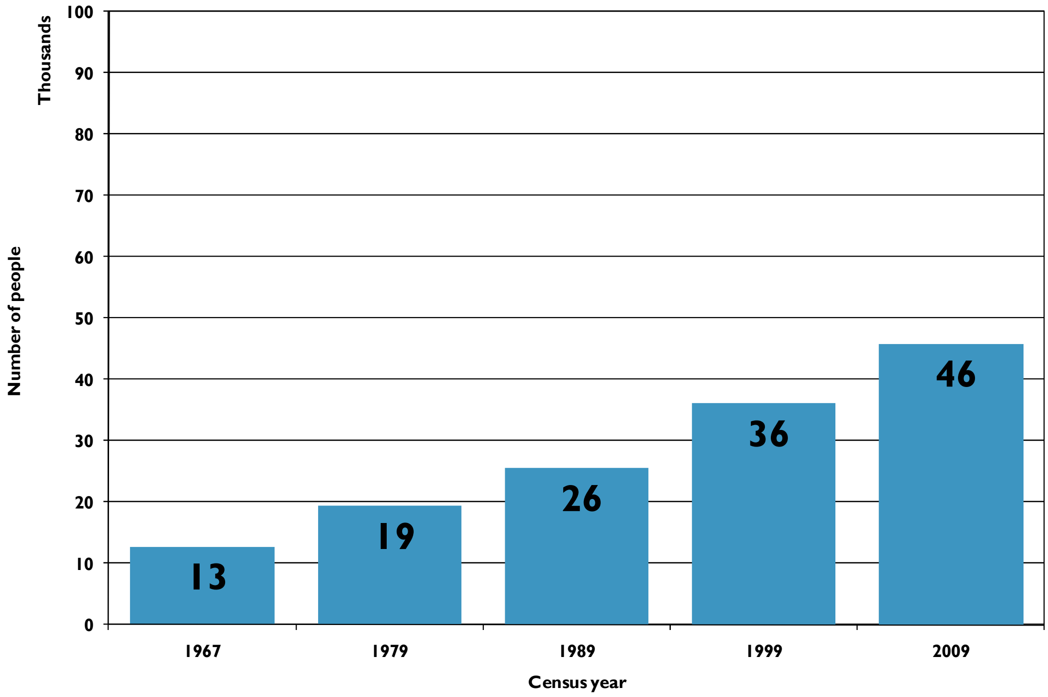
1999				2009			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	665	604	1,268	0-4	697	700	1,397
5-9	663	599	1,261	5-9	688	638	1,326
10-14	561	532	1,094	10-14	681	583	1,264
15-19	377	340	717	15-19	483	455	938
20-24	270	347	617	20-24	363	427	790
25-29	292	296	588	25-29	363	349	712
30-34	222	250	472	30-34	267	275	542
35-39	177	179	356	35-39	287	286	573
40-44	152	130	282	40-44	209	211	420
45-49	120	149	269	45-49	146	190	336
50-54	107	112	220	50-54	137	127	264
55-59	95	68	164	55-59	99	117	216
60-64	79	57	136	60-64	96	85	181
65-69	66	59	125	65-69	74	70	144
70-74	41	40	81	70-74	54	35	89
75-79	26	26	52	75-79	35	40	75
80+	23	31	54	80+	48	44	92
Total	3,937	3,820	**7,757**	Total	4,727	4,632	**9,359**
Population by broad age groups (in numbers)							
0-14	1,889	1,735	3,624	**0-14**	2,066	1,921	3,987
15-24	647	687	1,334	**15-24**	846	882	1,728
25-59	1,165	1,185	2,350	**25-59**	1,508	1,555	3,063
25-64	1,244	1,242	2,487	**25-64**	1,604	1,640	3,244
60+	236	214	450	**60+**	307	274	581
65+	157	156	313	**65+**	211	189	400
Population by broad age groups (in percentages)							
0-14	48	45	47	**0-14**	44	41	43
15-24	16	18	17	**15-24**	18	19	18
25-59	30	31	30	**25-59**	32	34	33
25-64	32	33	32	**25-64**	34	35	35
60+	6	6	6	**60+**	6	6	6
65+	4	4	4	**65+**	4	4	4
Age dependency ratio							
15-59			**111**	**15-59**			**95**
15-64			**103**	**15-64**			**88**
Sex ratio (males per 100 females)							
			103				**102**
Median age (years)							
Total	**16.1**	**17.6**	**16.8**	**Total**	**18.1**	**19.3**	**18.7**

Population change 1999-2009

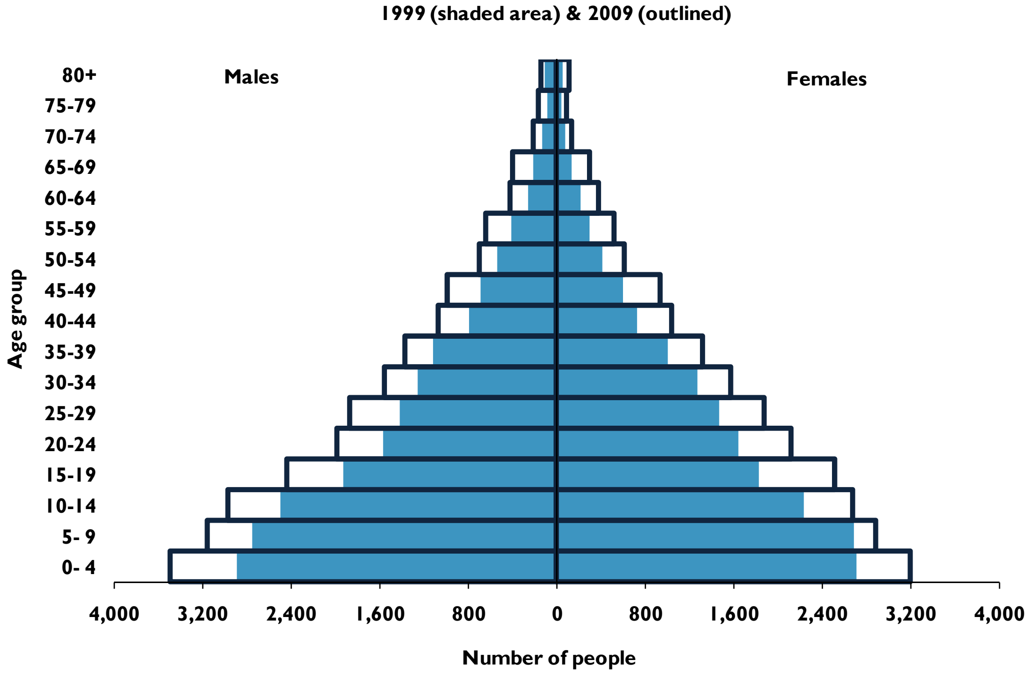
	Males	Females	**Total**
Total difference	790	812	**1,602**
Average annual change (in numbers)	79	81	**160**
Percentage difference (%)	20.1	21.3	**20.7**
Average annual growth rate (%)	1.8	1.9	**1.9**

SANMA

Population trend: 1967–2009



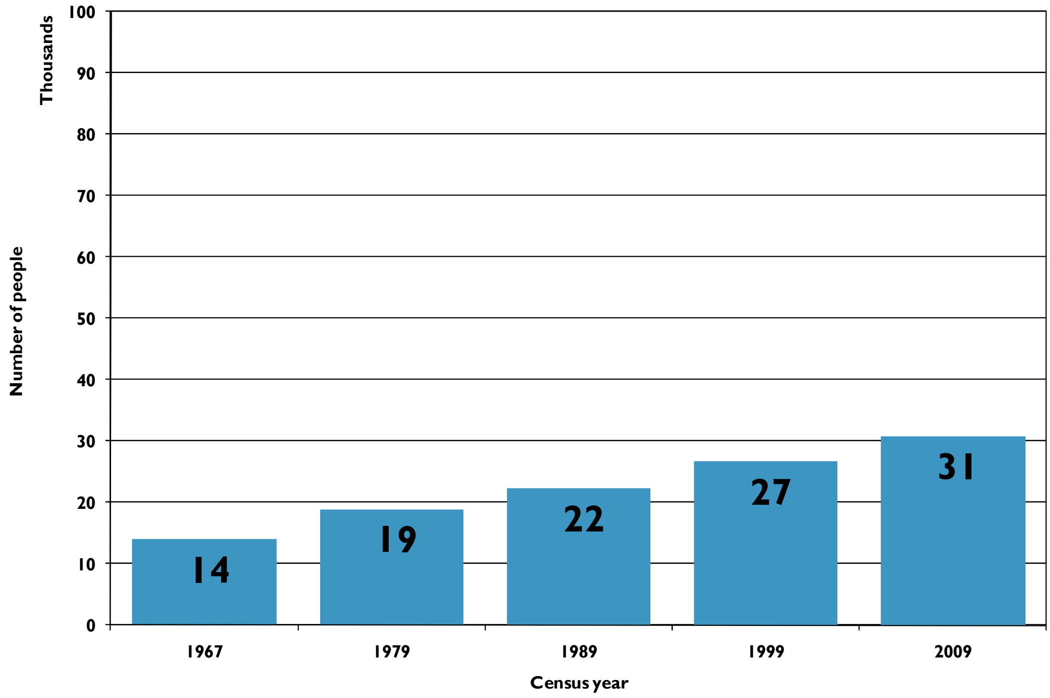
Population pyramid by five-year age group and sex, 1999 and 2009



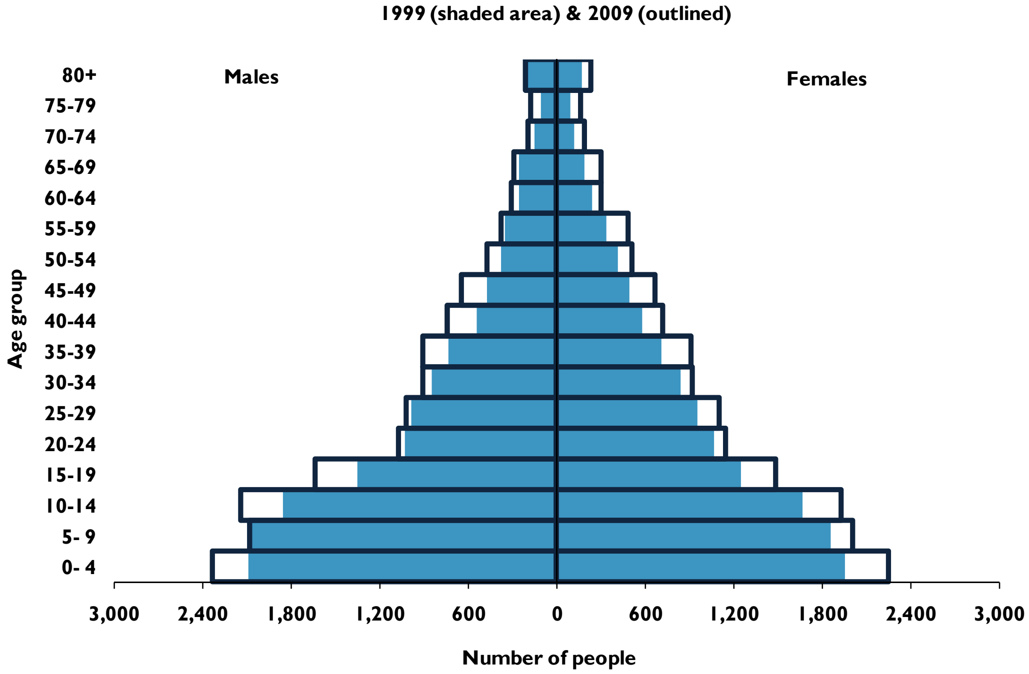
SANMA							
1999				2009			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	2,891	2,710	5,602	0-4	3,492	3,194	6,686
5-9	2,755	2,688	5,443	5-9	3,159	2,886	6,045
10-14	2,495	2,238	4,733	10-14	2,970	2,675	5,645
15-19	1,934	1,821	3,755	15-19	2,441	2,510	4,951
20-24	1,571	1,645	3,216	20-24	1,989	2,118	4,107
25-29	1,419	1,473	2,891	25-29	1,875	1,872	3,747
30-34	1,256	1,274	2,529	30-34	1,564	1,566	3,130
35-39	1,119	1,001	2,120	35-39	1,368	1,318	2,686
40-44	790	729	1,519	40-44	1,076	1,035	2,111
45-49	695	594	1,289	45-49	996	929	1,925
50-54	539	417	956	50-54	701	610	1,311
55-59	409	293	702	55-59	643	518	1,161
60-64	262	215	476	60-64	426	380	806
65-69	216	136	352	65-69	401	291	692
70-74	128	75	204	70-74	213	129	342
75-79	87	43	129	75-79	165	91	256
80+	110	57	168	80+	144	110	254
Total	18,676	17,408	**36,084**	Total	23,623	22,232	**45,855**
Population by broad age groups (in numbers)							
0-14	8,141	7,636	15,777	**0-14**	9,621	8,755	18,376
15-24	3,505	3,466	6,971	**15-24**	4,430	4,628	9,058
25-59	6,227	5,780	12,007	**25-59**	8,223	7,848	16,071
25-64	6,488	5,995	12,483	**25-64**	8,649	8,228	16,877
60+	803	526	1,329	**60+**	1,349	1,001	2,350
65+	541	311	853	**65+**	923	621	1,544
Population by broad age groups (in percentages)							
0-14	44	44	44	**0-14**	41	39	40
15-24	19	20	19	**15-24**	19	21	20
25-59	33	33	33	**25-59**	35	35	35
25-64	35	34	35	**25-64**	37	37	37
60+	4	3	4	**60+**	6	5	5
65+	3	2	2	**65+**	4	3	3
Age dependency ratio							
15-59			**90**	**15-59**			**82**
15-64			**85**	**15-64**			**77**
Sex ratio (males per 100 females)							
			107				**106**
Median age (years)							
Total	**18.1**	**17.9**	**18.0**	**Total**	**19.5**	**19.7**	**19.6**
Population change 1999-2009							
					Males	Females	**Total**
Total difference					4,947	4,824	**9,771**
Average annual change (in numbers)					495	482	**977**
Percentage difference (%)					26.5	27.7	**27.1**
Average annual growth rate (%)					2.3	2.4	**2.4**

PENAMA

Population trend: 1967–2009



Population pyramid by five-year age group and sex, 1999 and 2009

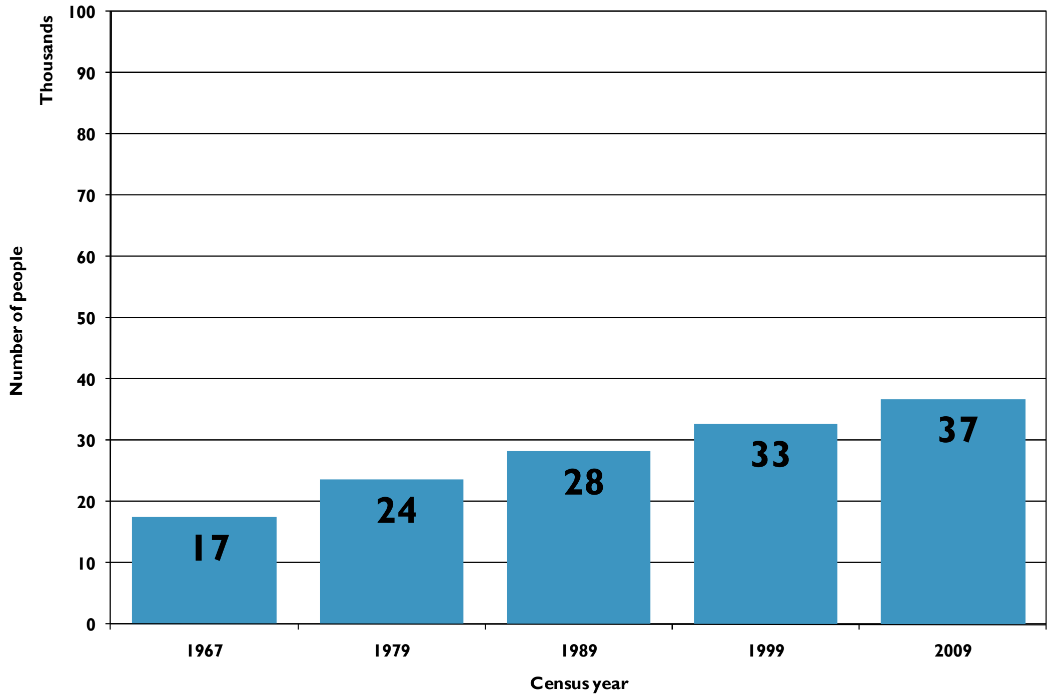


PENAMA

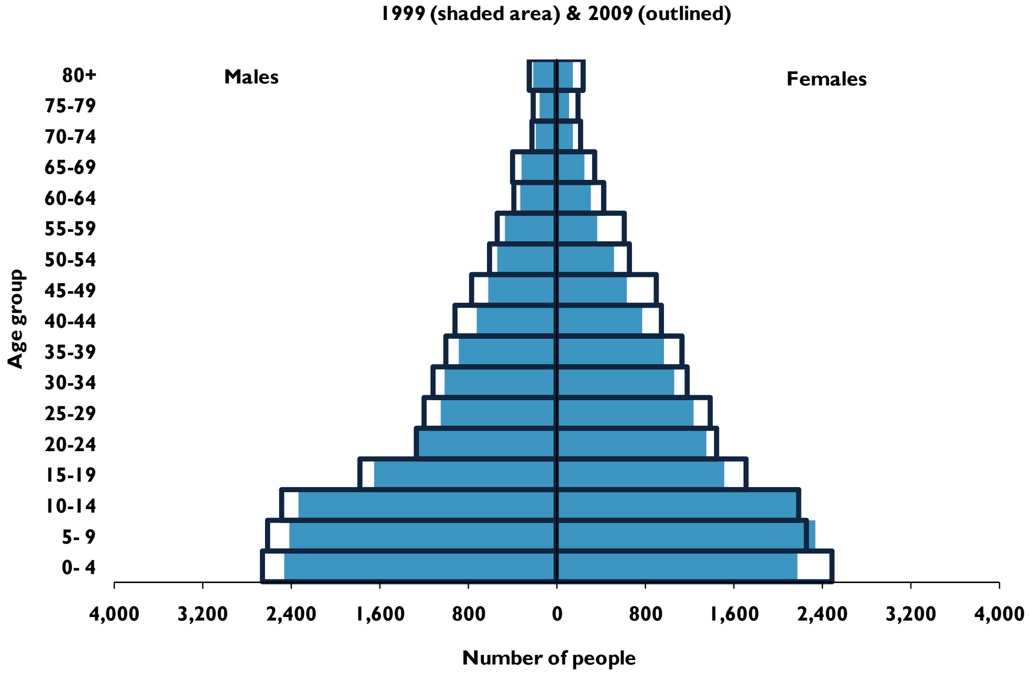
1999				2009			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	2,090	1,957	4,047	0-4	2,337	2,250	4,587
5-9	2,097	1,854	3,952	5-9	2,084	2,004	4,088
10-14	1,859	1,667	3,526	10-14	2,141	1,923	4,064
15-19	1,350	1,248	2,599	15-19	1,638	1,481	3,119
20-24	1,033	1,062	2,095	20-24	1,074	1,146	2,220
25-29	988	956	1,944	25-29	1,021	1,104	2,125
30-34	844	837	1,680	30-34	907	921	1,828
35-39	738	712	1,449	35-39	906	907	1,813
40-44	545	577	1,122	40-44	739	716	1,455
45-49	473	492	965	45-49	650	664	1,314
50-54	378	415	793	50-54	477	508	985
55-59	353	336	689	55-59	376	481	857
60-64	255	241	496	60-64	312	299	611
65-69	254	188	442	65-69	295	297	592
70-74	149	118	267	70-74	194	183	377
75-79	110	92	201	75-79	182	164	346
80+	209	170	379	80+	210	228	438
Total	13,724	12,922	**26,646**	Total	15,543	15,276	**30,819**
Population by broad age groups (in numbers)							
0-14	6,047	5,478	11,525	**0-14**	6,562	6,177	12,739
15-24	2,383	2,310	4,694	**15-24**	2,712	2,627	5,339
25-59	4,317	4,325	8,642	**25-59**	5,076	5,301	10,377
25-64	4,572	4,565	9,138	**25-64**	5,388	5,600	10,988
60+	977	808	1,785	**60+**	1,193	1,171	2,364
65+	722	568	1,289	**65+**	881	872	1,753
Population by broad age groups (in percentages)							
0-14	44	42	43	**0-14**	42	40	41
15-24	17	18	18	**15-24**	17	17	17
25-59	31	33	32	**25-59**	33	35	34
25-64	33	35	34	**25-64**	35	37	36
60+	7	6	7	**60+**	8	8	8
65+	5	4	5	**65+**	6	6	6
Age dependency ratio							
15-59			**100**	**15-59**			**96**
15-64			**93**	**15-64**			**89**
Sex ratio (males per 100 females)							
			106				**102**
Median age (years)							
Total	**18.0**	**18.9**	**18.5**	**Total**	**18.7**	**19.9**	**19.3**
Population change 1999-2009							
					Males	Females	**Total**
Total difference					1,819	2,354	**4,173**
Average annual change (in numbers)					182	235	**417**
Percentage difference (%)					13.3	18.2	**15.7**
Average annual growth rate (%)					1.2	1.7	**1.5**

MALAMPA

Population trend: 1967–2009



Population pyramid by five-year age group and sex, 1999 and 2009

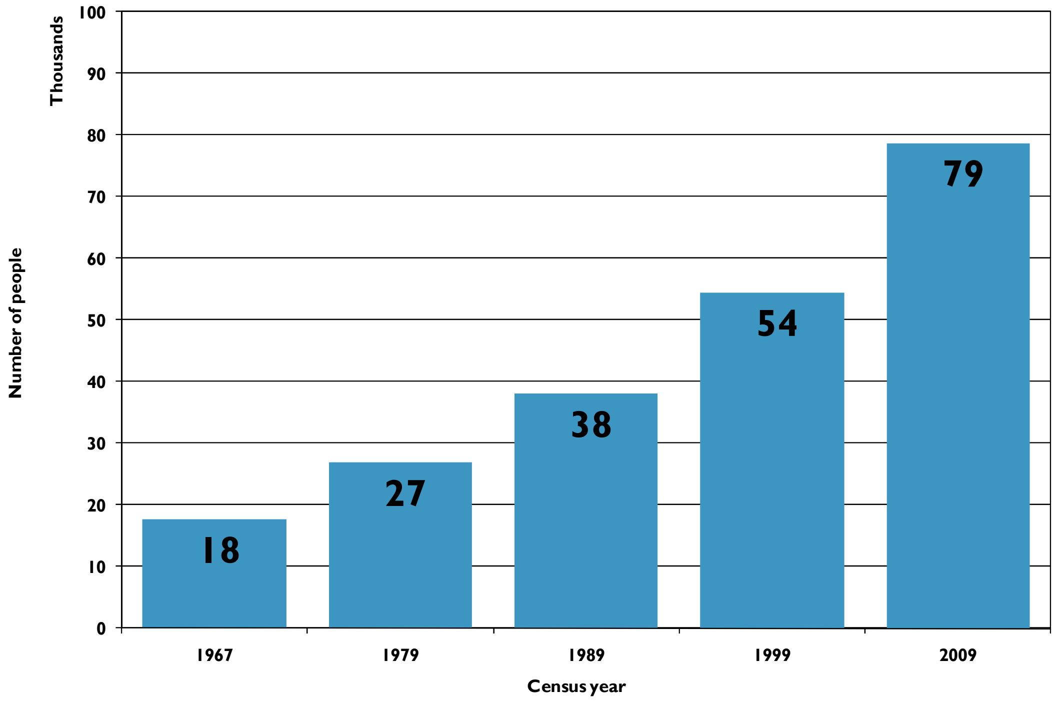


MALAMPA

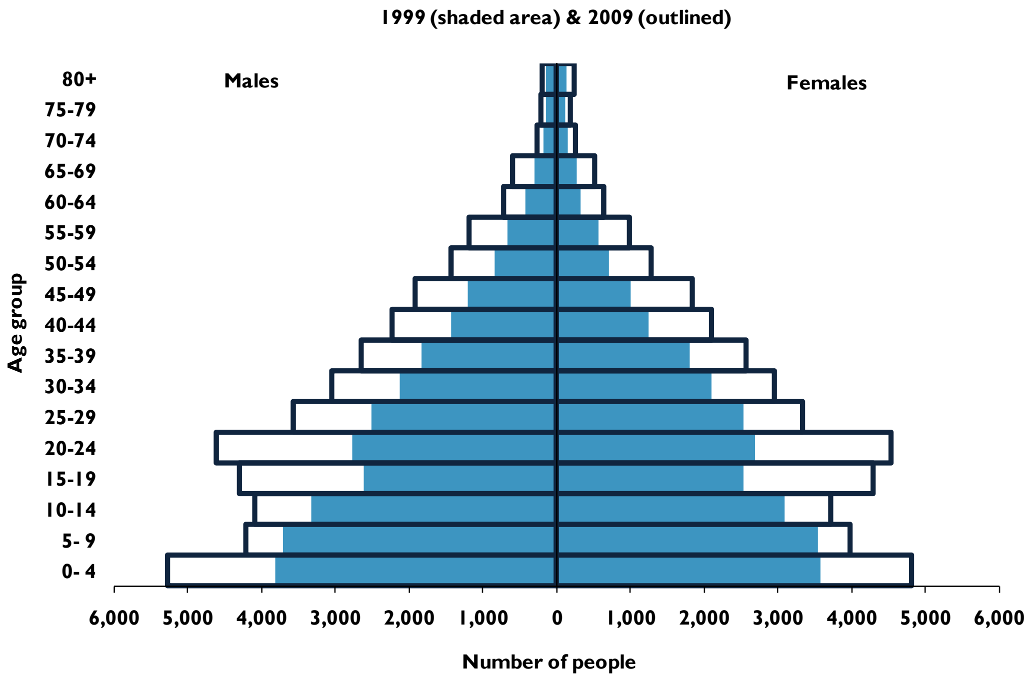
1999				2009			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	2,466	2,174	4,640	0-4	2,662	2,486	5,148
5-9	2,414	2,338	4,751	5-9	2,611	2,251	4,862
10-14	2,330	2,174	4,504	10-14	2,482	2,183	4,665
15-19	1,653	1,516	3,169	15-19	1,780	1,712	3,492
20-24	1,291	1,348	2,638	20-24	1,275	1,443	2,718
25-29	1,047	1,238	2,285	25-29	1,201	1,389	2,590
30-34	1,019	1,056	2,075	30-34	1,119	1,177	2,296
35-39	884	968	1,851	35-39	1,003	1,136	2,139
40-44	722	771	1,493	40-44	916	942	1,858
45-49	615	636	1,251	45-49	775	899	1,674
50-54	538	513	1,051	50-54	603	653	1,256
55-59	468	366	834	55-59	540	605	1,145
60-64	333	306	639	60-64	391	425	816
65-69	315	252	568	65-69	398	337	735
70-74	186	147	333	70-74	226	214	440
75-79	154	107	261	75-79	218	196	414
80+	218	144	362	80+	246	233	479
Total	16,653	16,052	**32,705**	Total	18,446	18,281	**36,727**
Population by broad age groups (in numbers)							
0-14	7,211	6,685	13,895	**0-14**	7,755	6,920	14,675
15-24	2,943	2,864	5,807	**15-24**	3,055	3,155	6,210
25-59	5,292	5,548	10,840	**25-59**	6,157	6,801	12,958
25-64	5,625	5,854	11,479	**25-64**	6,548	7,226	13,774
60+	1,207	956	2,163	**60+**	1,479	1,405	2,884
65+	874	650	1,524	**65+**	1,088	980	2,068
Population by broad age groups (in percentages)							
0-14	43	42	42	**0-14**	42	38	40
15-24	18	18	18	**15-24**	17	17	17
25-59	32	35	33	**25-59**	33	37	35
25-64	34	36	35	**25-64**	35	40	38
60+	7	6	7	**60+**	8	8	8
65+	5	4	5	**65+**	6	5	6
Age dependency ratio							
15-59			**96**	**15-59**			**92**
15-64			**89**	**15-64**			**84**
Sex ratio (males per 100 females)							
			104				**101**
Median age (years)							
Total	**18.4**	**19.4**	**18.9**	**Total**	**19.1**	**21.8**	**20.4**
Population change 1999-2009							
					Males	Females	**Total**
Total difference					1,793	2,229	**4,022**
Average annual change (in numbers)					179	223	**402**
Percentage difference (%)					10.8	13.9	**12.3**
Average annual growth rate (%)					1.0	1.3	**1.2**

SHEFA

Population trend: 1967–2009



Population pyramid by five-year age group and sex, 1999 and 2009

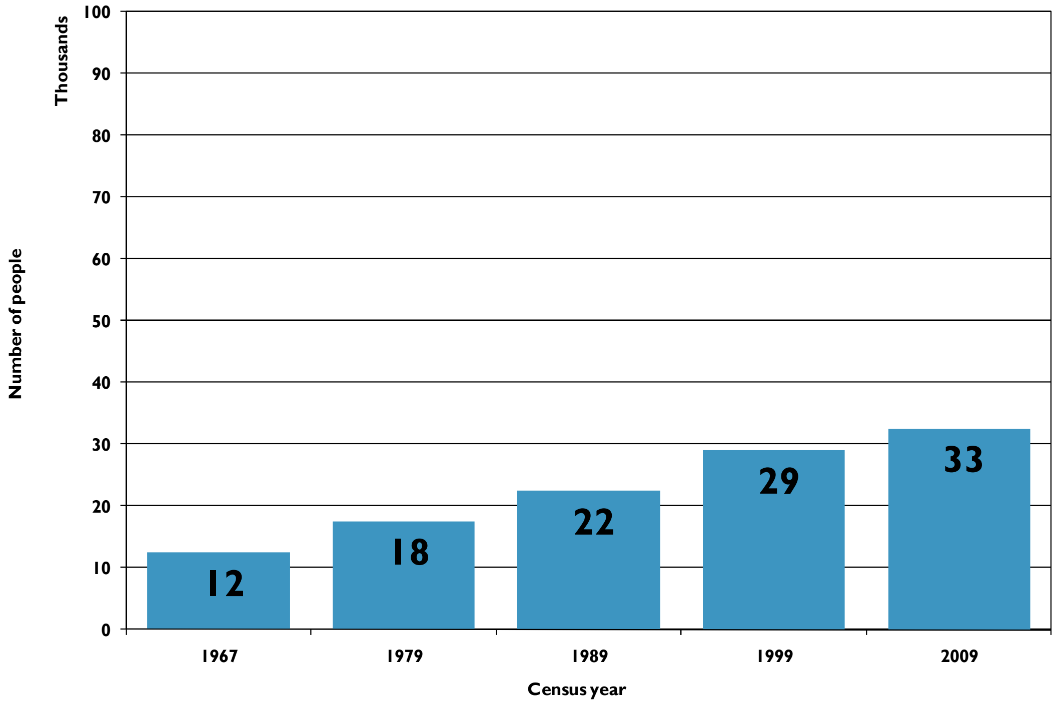


SHEFA							
1999				2009			
Age	Males	Females	Total	Age	Males	Females	Total
Population by 5-year age groups and sex							
0-4	3,813	3,571	7,384	0-4	5,270	4,811	10,081
5-9	3,720	3,537	7,257	5-9	4,218	3,982	8,200
10-14	3,335	3,092	6,427	10-14	4,100	3,711	7,811
15-19	2,610	2,535	5,145	15-19	4,298	4,290	8,588
20-24	2,780	2,687	5,467	20-24	4,612	4,534	9,146
25-29	2,519	2,528	5,047	25-29	3,575	3,329	6,904
30-34	2,127	2,097	4,224	30-34	3,049	2,946	5,995
35-39	1,838	1,794	3,632	35-39	2,644	2,569	5,213
40-44	1,440	1,247	2,687	40-44	2,235	2,091	4,326
45-49	1,211	996	2,207	45-49	1,922	1,827	3,749
50-54	851	700	1,551	50-54	1,431	1,286	2,717
55-59	675	558	1,233	55-59	1,194	984	2,178
60-64	419	323	743	60-64	722	635	1,357
65-69	309	265	574	65-69	593	508	1,101
70-74	178	149	327	70-74	269	256	525
75-79	148	116	264	75-79	225	186	411
80+	147	125	271	80+	193	228	421
Total	28,119	26,320	**54,439**	Total	40,550	38,173	**78,723**
Population by broad age groups (in numbers)							
0-14	10,868	10,201	21,069	**0-14**	13,588	12,504	26,092
15-24	5,390	5,222	10,611	**15-24**	8,910	8,824	17,734
25-59	10,661	9,919	20,580	**25-59**	16,050	15,032	31,082
25-64	11,080	10,243	21,323	**25-64**	16,772	15,667	32,439
60+	1,200	978	2,179	**60+**	2,002	1,813	3,815
65+	781	655	1,436	**65+**	1,280	1,178	2,458
Population by broad age groups (in percentages)							
0-14	39	39	39	**0-14**	34	33	33
15-24	19	20	19	**15-24**	22	23	23
25-59	38	38	38	**25-59**	40	39	39
25-64	39	39	39	**25-64**	41	41	41
60+	4	4	4	**60+**	5	5	5
65+	3	2	3	**65+**	3	3	3
Age dependency ratio							
15-59			**75**	**15-59**			**61**
15-64			**70**	**15-64**			**57**
Sex ratio (males per 100 females)							
			107				**106**
Median age (years)							
Total	**21.0**	**20.8**	**20.9**	**Total**	**22.6**	**22.5**	**22.6**

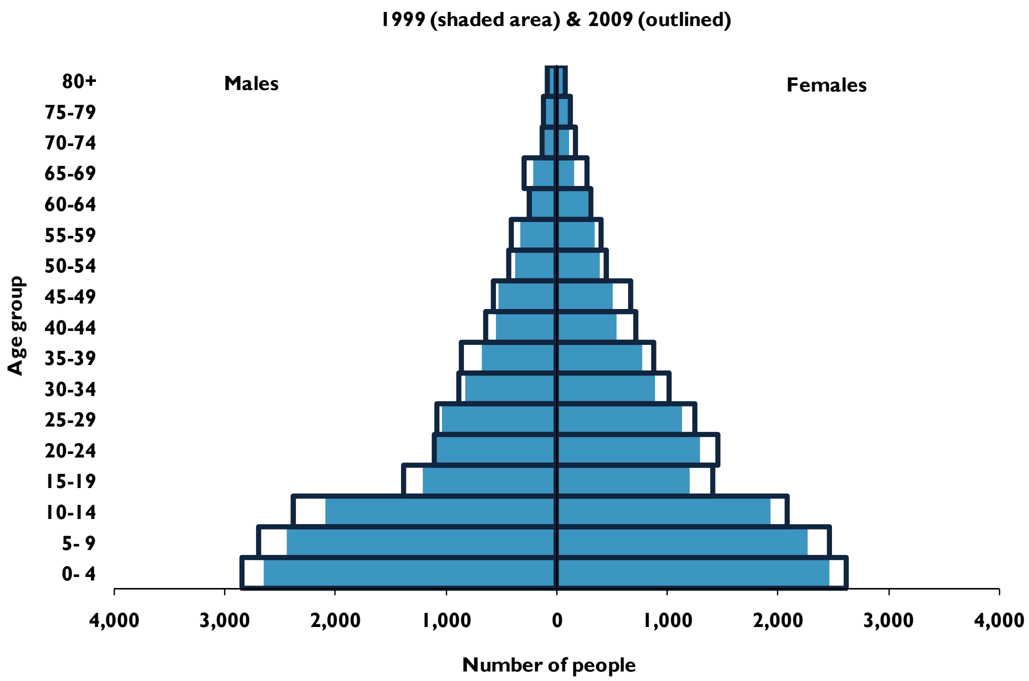
Population change 1999-2009	Males	Females	Total
Total difference	12,431	11,853	**24,284**
Average annual change (in numbers)	1,243	1,185	**2,428**
Percentage difference (%)	44.2	45.0	**44.6**
Average annual growth rate (%)	3.7	3.7	**3.7**

TAFEA

Population trend: 1967–2009



Population pyramid by five-year age group and sex, 1999 and 2009



TAFEA							
1999				2009			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	2,655	2,469	5,124	0-4	2,852	2,616	5,468
5-9	2,437	2,267	4,705	5-9	2,695	2,469	5,164
10-14	2,089	1,926	4,015	10-14	2,388	2,084	4,472
15-19	1,213	1,206	2,418	15-19	1,387	1,407	2,794
20-24	1,082	1,297	2,379	20-24	1,102	1,458	2,560
25-29	1,039	1,136	2,175	25-29	1,089	1,248	2,337
30-34	828	884	1,712	30-34	884	1,018	1,902
35-39	683	776	1,459	35-39	868	879	1,747
40-44	548	543	1,092	40-44	639	714	1,353
45-49	526	506	1,032	45-49	577	666	1,243
50-54	371	393	765	50-54	440	442	882
55-59	329	340	669	55-59	409	397	806
60-64	248	287	535	60-64	245	303	548
65-69	212	152	365	65-69	293	269	562
70-74	111	108	219	70-74	129	166	295
75-79	99	110	209	75-79	116	122	238
80+	102	73	175	80+	89	80	169
Total	14,573	14,474	**29,047**	Total	16,202	16,338	**32,540**
Population by broad age groups (in numbers)							
0-14	7,181	6,662	13,843	**0-14**	7,935	7,169	15,104
15-24	2,295	2,503	4,798	**15-24**	2,489	2,865	5,354
25-59	4,325	4,579	8,904	**25-59**	4,906	5,364	10,270
25-64	4,573	4,865	9,438	**25-64**	5,151	5,667	10,818
60+	772	730	1,502	**60+**	872	940	1,812
65+	524	443	968	**65+**	627	637	1,264
Population by broad age groups (in percentages)							
0-14	49	46	48	**0-14**	49	44	46
15-24	16	17	17	**15-24**	15	18	16
25-59	30	32	31	**25-59**	30	33	32
25-64	31	34	32	**25-64**	32	35	33
60+	5	5	5	**60+**	5	6	6
65+	4	3	3	**65+**	4	4	4
Age dependency ratio							
15-59			**112**	**15-59**			**108**
15-64			**104**	**15-64**			**101**
Sex ratio (males per 100 females)							
			101				**99**
Median age (years)							
Total	**15.4**	**17.4**	**16.4**	**Total**	**15.6**	**18.6**	**17.1**
Population change 1999-2009							
					Males	Females	**Total**
Total difference					1,629	1,864	**3,493**
Average annual change (in numbers)					163	186	**349**
Percentage difference (%)					11.2	12.9	**12.0**
Average annual growth rate (%)					1.1	1.2	**1.1**